2914 Series

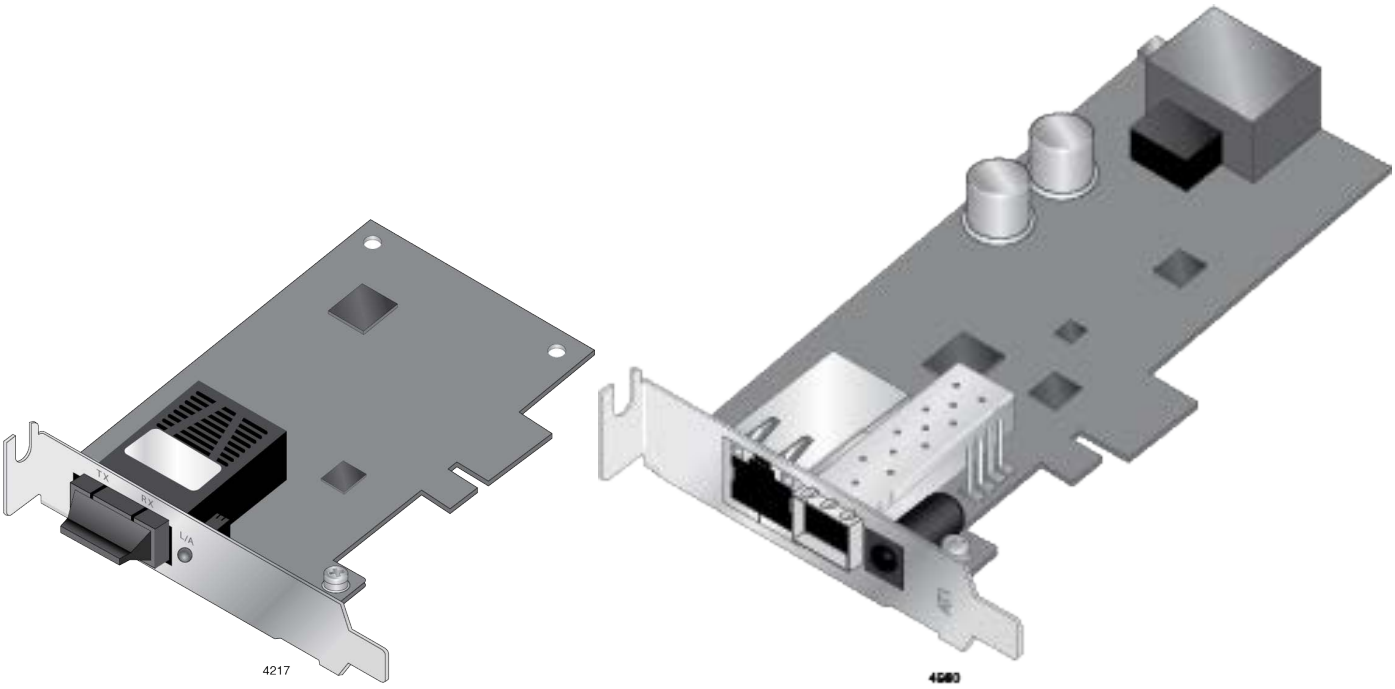
Fiber Network Adapters with Wake on LAN (WoL)

2914SX/SC

2914SX/LC

2914SP

2914GP/SP



Installation and User's Guide

613-002358 Rev. C

Electrical Safety and Emissions Standards

This product meets the following standards:

Federal Communications Commission Interference Statement

Declaration of Conformity

Manufacturer Name: **Allied Telesis, Inc.**
Declares that the product: **Fiber Network Adapter with WoL**
Model Number: **AT-2914SX/SC, AT-2914SX/LC, AT-2914SP, AT-2914GP/SP**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. E80

Avertissement
Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement. E80

European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment

This Allied Telesis RoHS-compliant product conforms to the European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment. Allied Telesis ensures RoHS conformance by requiring supplier Declarations of Conformity, monitoring incoming materials, and maintaining manufacturing process controls.

Safety and Electromagnetic Emissions Certificates

Standard Compliance

- CE
- RoHs compliant
- European Union RoHS (Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.)

Electromagnetic Compatibility (EMC)

- VCCI Class B (except AT-2914GP)
- EN55032
  - Class A (AT-2914GP)
  - Class B (all other models)
- EN55035
- FCC Part 15B
  - Class A (AT-2914GP)
  - Class B (all other models)

Safety

- UL60950-1 (except AT-2914GP)
- UL62368-1 (AT-2914GP)
- CSA22.2 No.60950-1-07 (except AT-2914GP)
- TUV EN60950-1 (except AT-2914GP)
- TUV EN62368-1 (AT-2914GP)

Translated Safety Statements

Important: The ☞ indicates that a translation of the safety statement is available in a PDF document titled “Translated Safety Statements” on the Allied Telesis website at **www.alliedtelesis.com/support**.

Remarque: Les consignes de sécurité portant le symbole ☞ sont traduites dans plusieurs langues dans le document *Translated Safety Statements,* disponible à l'adresse ***alliedtelesis.com***.

Table of Contents

Preface

This manual is the installation and user's guide for the 2914 Series of Fiber Network Adapters with WoL. The network adapters included in this series are:

- 2914SX/SC
- 2914SX/LC
- 2914SP
- 2914GP/SP

The Preface contains the following sections:

Safety Symbols Used in this Document

This document uses the following conventions:

Note
Notes provide additional information.

Caution
Cautions inform you that performing or omitting a specific action may result in equipment damage or loss of data.

Warning
Warnings inform you that performing or omitting a specific action may result in bodily injury.

Warning
Warnings inform you that an eye and skin hazard exists due to the presence of a Class 1 laser device.

Translated Safety Statements

Important: The ✍ indicates that translations of the safety statement are available in the PDF document **Translated Safety Statements** posted on the Allied Telesis website at **alliedtelesis.com/library/search**.

- Übersetzte Sicherheitserklärungen

  Wichtig: Das ✍ zeigt an, dass Übersetzungen der Sicherheitserklärung in den PDF-**Translated Safety Statements** auf der Allied Telesis-Website unter **alliedtelesis.com/us/en/library/search** verfügbar sind.

- Declaraciones de seguridad traducidas

  Importante: El ✍ indica que las traducciones de la declaración de seguridad están disponibles en las **Translated Safety Statements** en PDF publicadas en el sitio web de Allied Telesis en **alliedtelesis.com/us/en/library/search**.

- Consignes de sécurité traduites

  Important: Le symbole ✍ indique que les traductions de la déclaration de sécurité sont disponibles dans le PDF **Translated Safety Statements** publiées sur le site Web de Allied Telesis à l'adresse **alliedtelesis.com/us/en/library/search**.

- Dichiarazioni di sicurezza tradotte

  Importante: ✍ indica che le traduzioni della dichiarazione di sicurezza sono disponibili nelle **Translated Safety Statements** in PDF pubblicate sul sito Web di Allied Telesis all'indirizzo **alliedtelesis.com/us/en/library/search**.

- Översatta säkerhetsförklaringar

  Viktig: ✍ anger att översättningar av säkerhetsförklaringen finns tillgängliga i PDF-dokumentet **Translated Safety Statements** som publicerats på Allied Telesis webbplats på **alliedtelesis.com/us/en/library/search**.

Contacting Allied Telesis

If you need Allied Telesis technical support, visit **www.alliedtelesis.com/support**.

Chapter 1
Introduction

This chapter provides an introduction to the 2914 Series of Fiber Optic Network Adapters with WoL.

This chapter contains the following sections:

Description

The 2914 fiber network adapter series is a 100/1000Mb Ethernet PCI Express (PCIe) card equipped with one fiber optic port or SFP slot. The 2914GP/SP model comes with one copper port with Power over Ethernet (PoE) capability in addition to the SFP fiber slot.

The 2914 network adapters support the Wake-on-LAN (WoL) feature. WoL is a protocol for remotely turning on a computer in a low power mode with a network message. A magic packet is a network message that a WoL-enabled computer receives and wakes up when the computer's MAC address matches one in the magic packet.

The 2914SX/SC and 2914SX/LC models are Gigabit Ethernet network adapters operating at 1000Mbps. The 2914SP and 2914GP/SP models can operate at 100Mbps or 1000Mbps depending on the SFP type in use. The copper port on the 2914GP/SP model can operate at 10, 100, or 1000Mbps.

If you installed the network adapter on your Windows platform, you must install network adapter driver software. For instructions, see Chapter 3, "Installing the Driver Software" on page 43.

Note
You do *not* need to install network adapter driver software for Linux systems because Linux has inbox drivers for the network adapters.

Figure 1 shows the 2914SX/SC model.

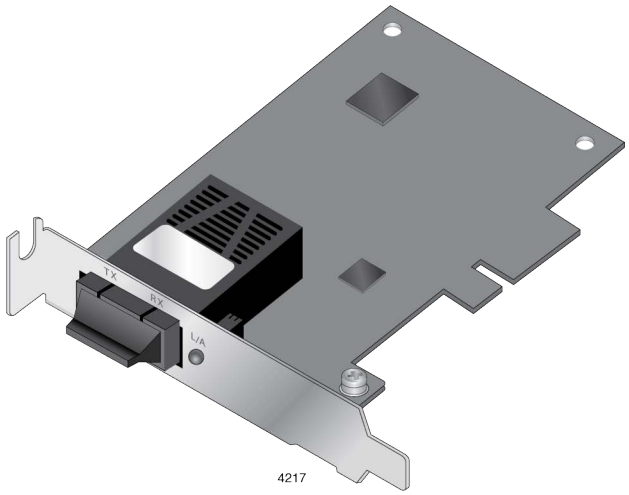


Figure 1. 2914SX/SC Network Adapter

2914 Series Products

The 2914 series includes the following models:

- 2914SX/SC network adapter
- 2914SX/LC network adapter
- 2914SP network adapter
- 2914GP/SP network adapter

The 2914GP/SP model can use the optional power supply:

- 2914GP-PSU power supply unit

Note
For more information about the 2914GP/SP network adapter and 2914GP-PSU power supply unit, see “The 2914GP/SP Network Adapter” on page 20.

Duplex SC Fiber Optic Connector

The 2914SX/SC network adapter is equipped with a 1000BASE-SX port with a duplex SC connector. See Figure 2.

Figure 2. SC Fiber Optic Connector

The duplex SC port has the following cable requirements:

- 50/125 µm (core/cladding) multimode fiber optic cable up to 500m
- 62.5/125 µm (core/cladding) multimode fiber optic cable up to 220m

LC Fiber Optic Adapter

The 2914SX/LC network adapter is equipped with a 1000BASE-SX port with the LC connector. See Figure 3.

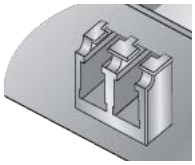


Figure 3. LC Fiber Optic Connector

The duplex LC port has the following cable requirements:

- ❒ 50/125 µm (core/cladding) multimode fiber optic cable up to 500m
- ❒ 62.5/125 µm (core/cladding) multimode fiber optic cable up to 220m

SFP Slot

The 2914SP and 2914GP/SP adapters have SFP slots for 100Mbps or 1000Mbps SFP transceivers. The ports operate in full-duplex mode only. See Figure 4.

Note
An SFP transceiver must be purchased separately. For a list of supported transceivers, see the product's data sheet.

Figure 4. SFP Slot

LED

The fiber optic port on the network adapter comes with one LED on the front panel as shown in Figure 5. The LED indicates the link and activity status of the port.

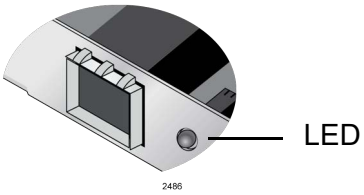


Figure 5. LED Except 2914GP/SP

Table 1 describes the link states of the LED except for the 2914GP/SP model.

Table 1. LED Status Except 2914GP/SP

State	Description
On	Valid link.
Off	No link.
Flashing	The port is receiving or transmitting network packets.

Twisted Pair Copper Port

The 2914GP/SP network adapter is equipped with a PoE+ copper port for a 10/100/1000BASE-T twisted pair cable. See Figure 6.

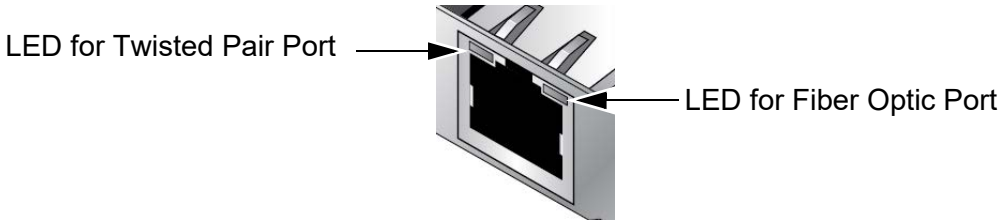


Figure 6. Twisted Pair Port and LEDs

The minimum cable requirement for the 2914GP/SP network adapter is a TIA/EIA 568-B-compliant Enhanced 5 (Cat 5e) unshielded cable.

The twisted pair port has two LEDs. For link states and descriptions, see Table 2.

Table 2. LED Status for the Twisted Pair Port on 2914GP/SP

LED	State	Description
Top-left LED (For Twisted Pair Port)	On	Valid link on the twisted pair port
	Off	No link on the twisted pair port
	Flashing	The twisted pair port is receiving or transmitting network packets.
Top-right LED (For Fiber Port)	On	Valid link on the fiber optic port
	Off	No link on the fiber optic port
	Flashing	The fiber optic port is receiving or transmitting network packets.

The 2914GP/SP Network Adapter

The 2914GP/SP network adapter is equipped with an SFP slot and a twisted pair copper port with Power over Ethernet Plus (PoE+) capability. The adapter can supply power to the PoE+ copper port from the PCIe slot or an optional external power supply, the 2914GP-PSU unit. See Figure 7.

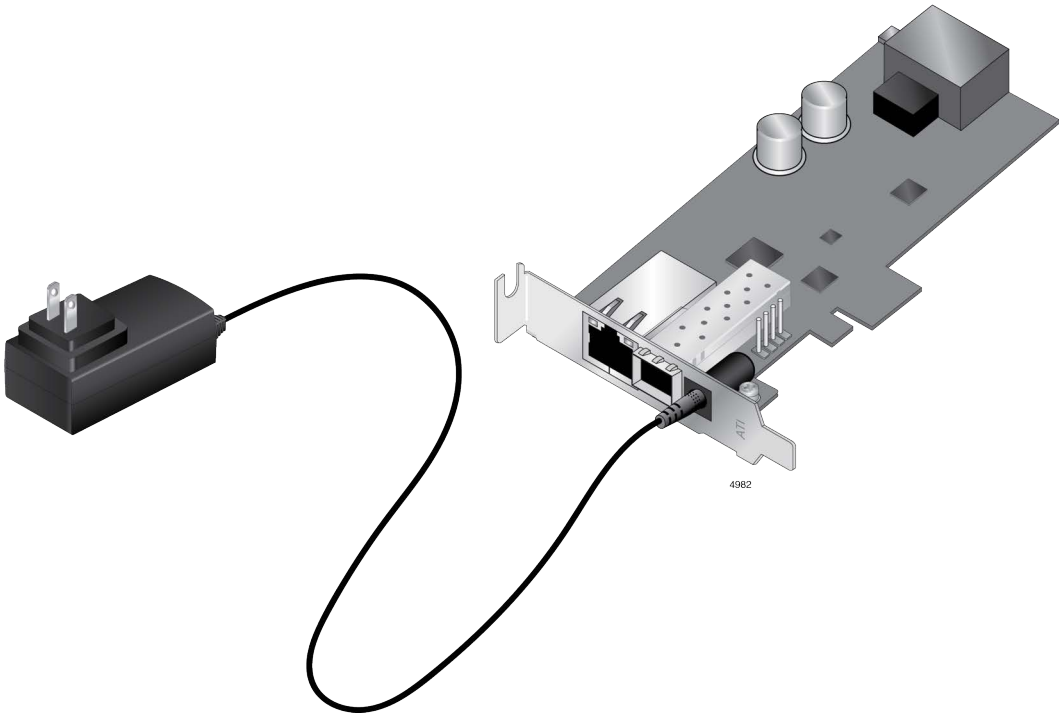


Figure 7. 2914GP/SP Adapter and 2914GP-PSU Product

The network adapter is used as a bridge that connects two ports on the adapter to the same network. The adapter appears to the PC as a single port network adapter, like other 2914 series adapters. The data from the copper port and the PC is routed directly to the fiber port without any interaction from the system.

Optional configurable VLAN ID's can be used to tag and segregate the packets egressing onto the fiber connection. For more information, see Chapter 4, "Configuring the VLAN and Priority" on page 55.

Power over Ethernet (PoE)

PoE is a system that supports power along with data using a single Ethernet cable. Power over Ethernet Plus (PoE+) is a PoE standard for devices that provide power up to 25.5 watts. The 2914GP/SP network adapter with the 2914GP-PSU supports PoE+.

2914GP-PSU Power Cord

When the optional 2914GP-PSU power cord is plugged into an AC power supply and connected to the 2914GP/SP adapter, the adapter can provide a Powered Device (PD) connected to the adapter through the copper port up to 25.5W of power.

Without the 2914GP-PSU power supply unit, the 2914GP/SP adapter provides the PD with limited power, depending on the capability of the system's PCIe 12V power rail. It is typically 10-15W; however, verify your system's specifications and derate by 20% for planning purposes.

In addition to providing more power to the PD, with the 2914GP-PSU power supply unit, the adapter allows communications even when the system where the 2914GP/SP adapter is installed is powered off.

When the 2914GP-PSU power supply unit is present, the 2914GP/SP adapter uses the power supply unit to provide power to the PD and does *not* use 12V power from the PCIe slot.

Console Port

The 2914GP/SP network adapter is equipped with a USB Micro-B receptacle that functions as a Console port. By connecting the adapter and your management PC to the Console port, you can access the Command Line Interface (CLI) to manage the VLAN and priority of the adapter.

Bridge to Connect Two Ports to One Network

The 2914GP/SP adapter is designed to connect a PC and a PoE powered device to an Ethernet network. A PoE powered device can be a Voice over IP (VoIP) phone, Wi-Fi access point, or security camera. The adapter functions as a bridge between the fiber port and copper port, while also using the fiber port for PC communication. Figure 8 illustrates an example of a topology with VoIP phones.

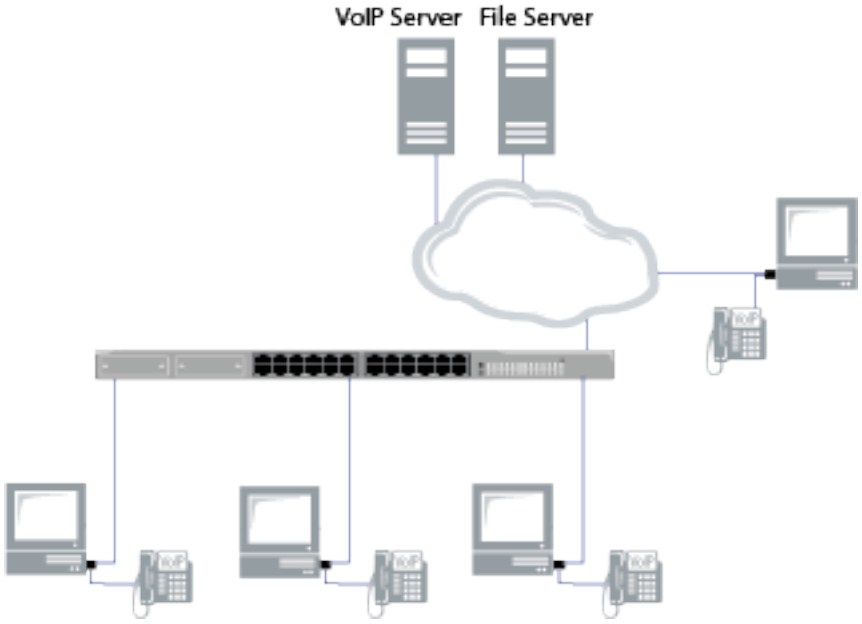


Figure 8. VoIP System Configuration as an Example

The 2914GP/SP adapter can be used to add VLAN & QoS Priority tags to the phone and/or PC data traffic.

To add VLAN & QoS Priority tags, see Chapter 4, "Configuring the VLAN and Priority" on page 55. To use the 2914GP/SP adapter as a bridge to connect two ports to one network, see Chapter 5, "Configuring a VoIP Phone System" on page 65 as an example.

Model Naming Conventions

The hardware features of the 2914 series network adapters are represented by the letters and numbers in the model names. The conventions for the 2914 series network adapters are identified in Figure 9.

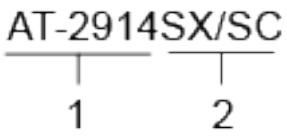


Figure 9. 2914 Series Model Naming Conventions

The conventions are defined in Table 3.

Table 3. 2914 Series Model Naming Conventions

Convention	Definition
1	Indicates the product name
2	Identifies the type of the port. The following is a list of options: ❒ SX/SC - port of 1000BASE-SX (short haul) fiber optic cable with a duplex SC connector ❒ SX/LC - port of 1000BASE-SX (short haul) fiber optic cable with a duplex LC connector ❒ SP - SFP slot ❒ GP/SP - PoE-capable copper port and an SFP slot ❒ PSU - power supply unit for the PoE-capable copper port

Supported Operating Systems

The following list shows the supported operating systems:

- Windows 11
- Windows 10
- Windows Server 2022
- Windows Server 2019
- Linux

The 2914 series network adapter that is installed on Linux systems uses Linux inbox driver software to operate so that you do not need to install driver software for Linux systems. A driver supplied with an operating system is called an inbox driver.

For the Windows platforms, you must install driver software for the network adapters. See Chapter 3, "Installing the Driver Software" on page 43.

Accessing Documents

Documents for 2914 network adapters are available at Allied Telesis websites.

Allied Telesis Documents

To access these documents, do the following:

1. Open a web browser, such as Internet Explorer or FireFox, on your system and enter the following:

   http://www.alliedtelesis.com/

2. Enter “2914” in the search box and press Enter.

3. Click one of the listed documents.

   The content of the document is displayed.

Contents of Your Shipment

The following items are Included with your network adapter:

- Antistatic bag

  The network adapter is shipped in an antistatic bag. It protects the network adapter when stored or shipped. Keep the network adapter in its packaging until ready for installation.

- Standard-profile bracket

  The standard-profile bracket is longer than the low-profile bracket. The 2914 series network adapters are shipped with a low-profile bracket attached.

> **Note**
> The driver software for Windows platforms is from the Allied Telesis website. See Chapter 3, "Downloading the Driver Software" on page 45.

Inform your network equipment supplier of any missing or damaged items. If you need to return the module, you must pack it in the original (or equivalent) packing material or the warranty will be voided. See "Contacting Allied Telesis" on page 14.

Warranty Registration

Allied Telesis hardware products are covered under limited warranties.

All Allied Telesis warranties are subject to and provided only on the terms and conditions set out in the Allied Telesis. For more information, visit the Allied Telesis website at:

https://www.alliedtelesis.com/en/support/maintenance-and-warranty.

Chapter 2

Installing the Hardware

This chapter contains the following sections:

System Requirements

Before installing the 2914 series network adapter, make sure your system meets the requirements listed below:

- PC with one of the following operating systems:
  - Windows 11
  - Windows 10
  - Windows Server 2022
  - Windows Server 2019
  - Linux
- One open PCIe slot
- 128 MB RAM (minimum)

Reviewing Safety Precautions

Review the following safety precautions before you begin to install a network adapter.

Note
The ✍ indicates that a translation of the safety statement is available in a PDF document titled “Translated Safety Statements” posted on the Allied Telesis website at **www.alliedtelesis.com/support/software/**.

Warning
Do not stare into the laser beam. ✍ **L2**

Warning
The fiber optic ports contain a Class 1 laser device. When the ports are disconnected, always cover them with the provided plug. Exposed ports may cause skin or eye damage. ✍ **L4**

Warning
Do not look directly at the fiber optic cable ends or inspect the cable ends with an optical lens. ✍ **L6**

Warning
Do not work on this equipment or cables during periods of lightning activity. ✍ **E2**

Warning
Operating Temperature: This product is designed for a maximum ambient temperature of 50 degrees C. ✍ **E7**

Note
All Countries: Install this product in accordance with local and National Electric Codes. ✍ **E8**

Warning
The module is being installed in a system that operates with voltages that can be lethal. Before you remove the cover of your system, you must observe the following precautions to protect yourself and to prevent damage to the system components.

– Remove any metallic objects or jewelry from your hands and wrists.

– Make sure to use only insulated or nonconducting tools.

– Verify that the system is powered OFF and unplugged before accessing internal components.

– Installation or removal of modules must be performed in a static-free environment. The use of a properly grounded wrist strap or other personal antistatic devices and an antistatic mat is strongly recommended. **E39**

Caution
Do not use excessive force when seating the card, as the force may damage the system or the adapter card. If the card resists seating, remove it from the system, realign it, and try again. **E47**

Pre-Installation Checklist

Before installing the 2914 series network adapter, check the following list:

1. Check that your computer has an appropriate open PCIe slot.
2. Verify that your system is using the latest BIOS.
3. When you download the driver software from the Allied Telesis website, record the path to where the driver file resides on your system.
4. If your system is active, shut it down.
5. When system shutdown is complete, power OFF and unplug your system.
6. Holding the adapter card by the edges, remove it from its shipping package and place it on an antistatic surface.
7. Check the adapter for visible signs of damage, particularly on the card's edge connector.

Note
Do not attempt to install a damaged adapter card. If the adapter card is damaged, report it to Allied Telesis. See "Contacting Allied Telesis" on page 14.

Replacing the Bracket

The 2914 series network adapter is shipped with the low-profile bracket attached to the adapter. Depending on your system, you may need to replace the bracket with the standard bracket.

The following procedure describes how to remove the low-profile bracket from the network adapter and replace it with the standard bracket. You can also use this procedure to remove the standard bracket and replace it with the low-profile bracket.

To replace the low-profile bracket with the standard bracket, perform the following procedure:

1. Remove the screws that attach the bracket to the network adapter. See Figure 10.

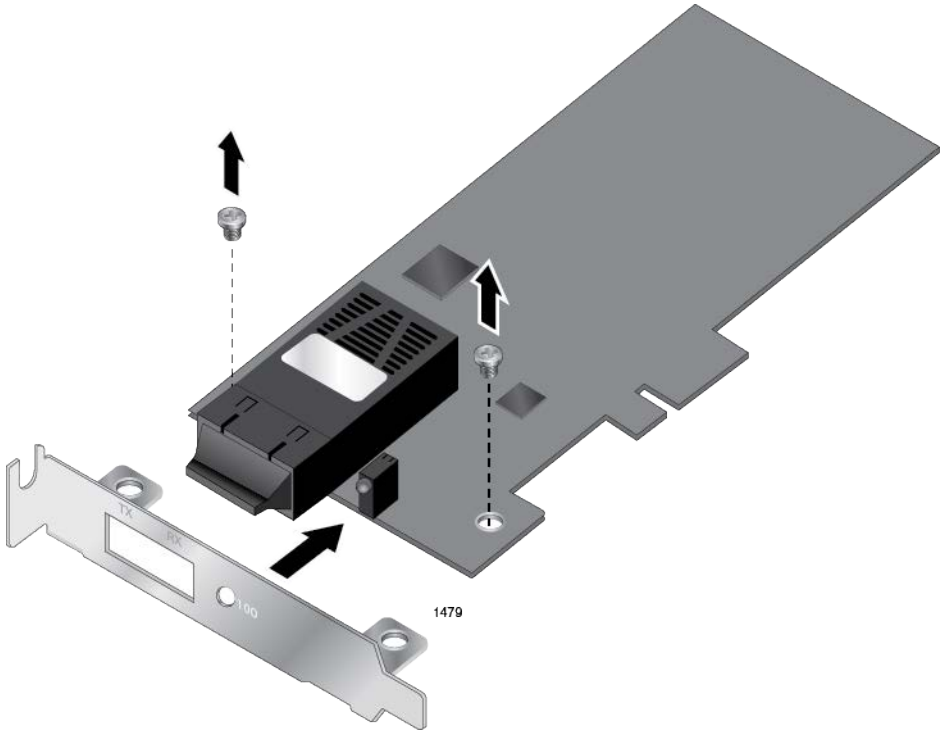


Figure 10. Removing the Low-Profile Bracket

2. Align the tabs of the standard bracket with the holes on the network adapter and fasten the screws onto the network adapter. See Figure 11 on page 35.

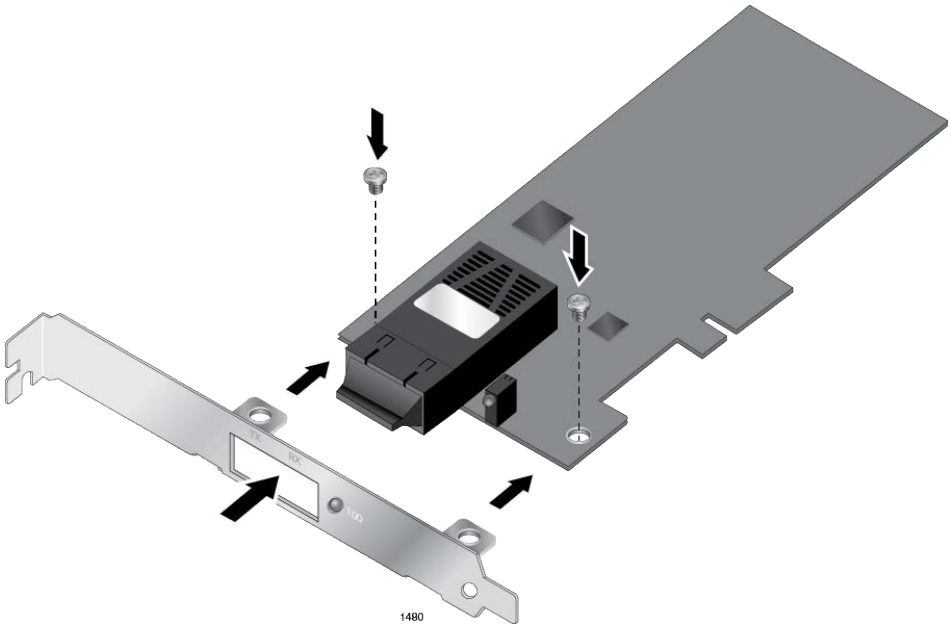


Figure 11. Installing the Standard Bracket

Installing a Network Adapter

The following instructions apply to installing a 2914 series network adapter in most systems. Refer to the manuals that were supplied with your system for details about performing these tasks on your particular system.

To install the network adapter, perform the following procedure:

1. Review the "Pre-Installation Checklist" on page 33 and "Reviewing Safety Precautions" on page 31.

   Before installing the network adapter, ensure the system power is OFF and unplugged from the power outlet, and that proper electrical grounding procedures have been followed.

Warning
The module is being installed in a system that operates with voltages that can be lethal. Before you remove the cover of your system, you must observe the following precautions to protect yourself and to prevent damage to the system components.

– Remove any metallic objects or jewelry from your hands and wrists.

– Make sure to use only insulated or nonconducting tools.

– Verify that the system is powered OFF and unplugged before accessing internal components.

– Installation or removal of modules must be performed in a static-free environment. The use of a properly grounded wrist strap or other personal antistatic devices and an antistatic mat is strongly recommended. E39

2. Remove the system cover and select any empty PCIe slot. See Figure 12 on page 37.

   If you do not know how to identify a PCIe slot, see your system documentation.

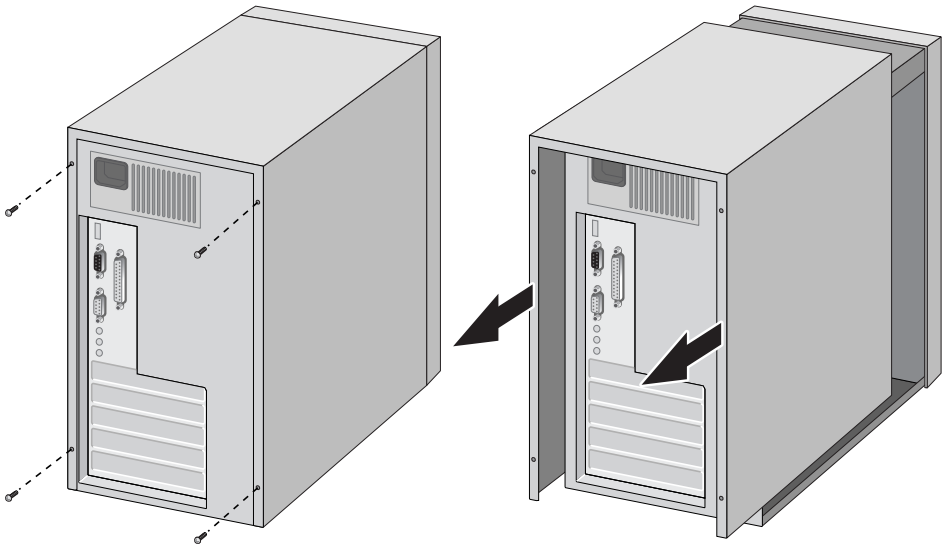


Figure 12. Removing the PC Cover

3. Select an empty, non-shared PCIe slot and remove the faceplate.

   Keep the faceplate in a safe place. You may need it for future use. See Figure 13.

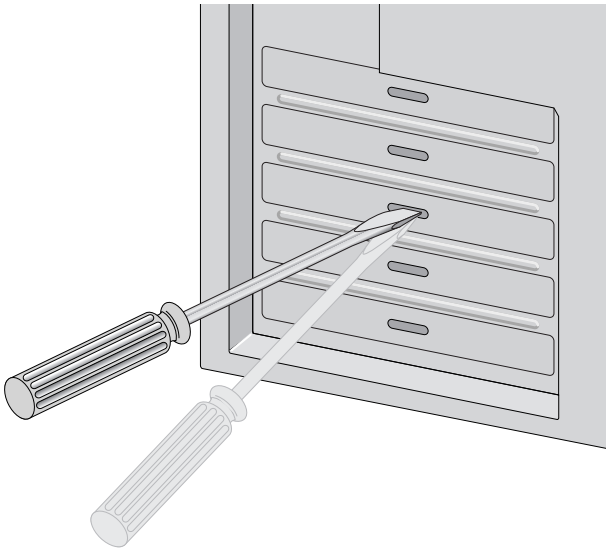


Figure 13. Removing the Faceplate From PCIe Slot

4. Remove the network adapter from the shipping package and store the packaging material in a safe location.

5. Applying even pressure at both corners of the network adapter, push the adapter until it is firmly seated in the PCIe slot.

   Make sure the adapter is securely seated. See Figure 14 on page 38.

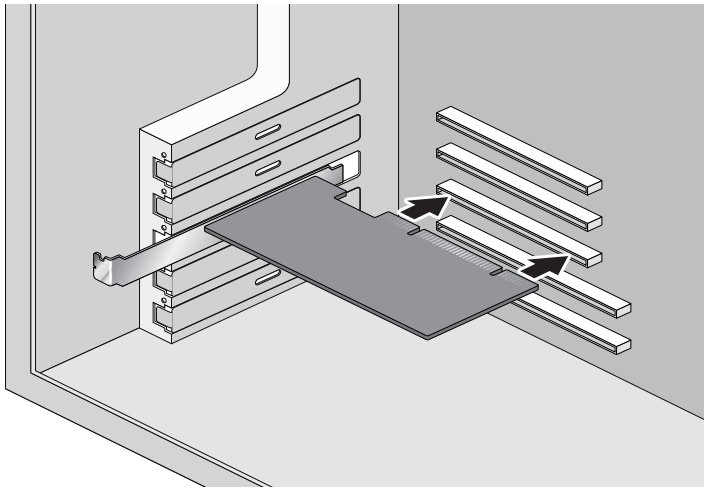


Figure 14. Inserting the Network Adapter

Caution

Do not use excessive force when seating the adapter, as the force may damage the system or the adapter. If the adapter resists seating, remove it from the system, realign it, and try again.E47

6. Secure the network adapter to the chassis with a Phillips-head screw (not provided) as shown in Figure 15.

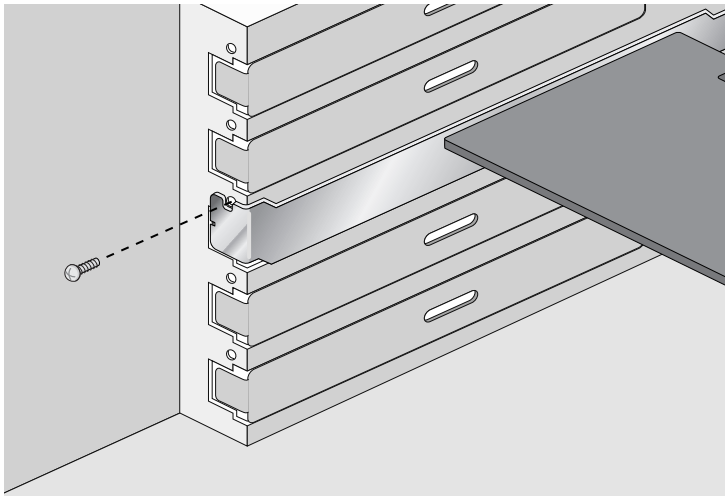


Figure 15. Securing the Network Adapter

7. Replace the system's cover and secure it with the screws removed in step 2.
8. Disconnect any personal antistatic devices.
9. Power the system on.

Next, connect the network cables. See “Connecting the Network Cables” on page 41.

Connecting the 2914GP-PSU Power Cord to the 2914GP/SP Network Adapter

Using the 2914GP-PSU power supply unit, the adapter can provide a PD connected to the adapter through the copper port up to 25.5W of power. In addition to providing more power to the PD, the adapter allows communications even when the system is powered off.

Without the 2914GP-PSU power supply unit, the 2914GP/SP adapter provides the PD with limited power, depending on the capability of the system's PCIe 12V power rail. It is typically 10-15W; however, verify your system's specifications and derate by 20% for planning purposes.

To connect the 2914GP-PSU power supply unit to the 2914GP/SP adapter, perform the following procedures:

1. Make sure that the 2914GP/SP network adapter is installed in your system properly.

   To install the 2914GP/SP network adapter, see "Installing a Network Adapter" on page 36.

2. Insert the 2914GP-PSU power cord connector to the front panel of the 2914GP/SP network adapter and turn the connector clockwise. See Figure 16.

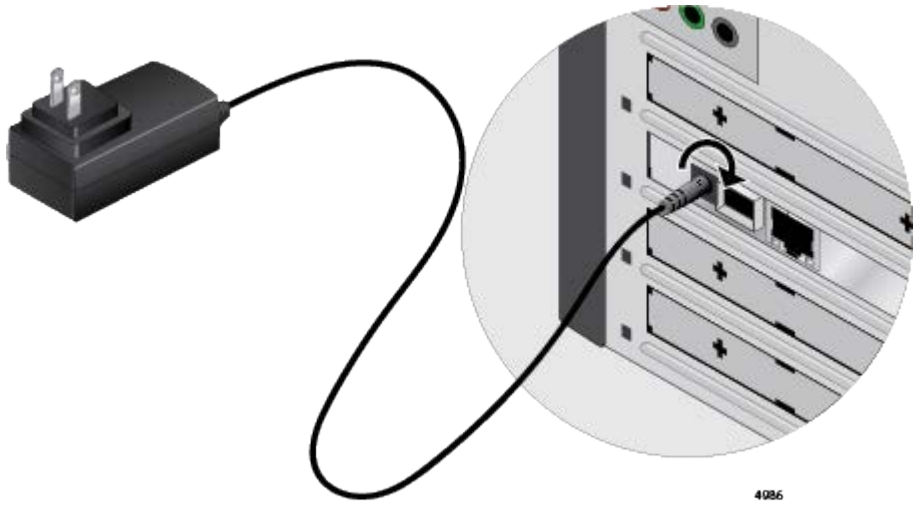


Figure 16. Connecting Power Cord to the Network Adapter

3. Connect the other side of the power cord to an appropriate AC power source.

   The 2914GP/SP adapter starts using the AC power source to provide power to a connected PD.

Connecting the Network Cables

The 2914 series network adapter is equipped with a fiber optic port. To connect the network adapter to the network, you must have a fiber optic cable with the appropriate connector.

Connecting a Fiber Optic Network Cable

To connect a fiber optic network cable to the network adapter, perform the following procedure:

1. Prepare a fiber optic cable with an appropriate connector.

Warning
The fiber optic ports contain a Class 1 laser device. When the ports are disconnected, always cover them with the provided plug. Exposed ports may cause skin or eye damage. L4

2. Remove a rubber plug from the network adapter.
3. Connect one end of the cable to the network adapter.
4. Connect the other end of the cable to the appropriate Ethernet network port.

   After the system is connected to the network and power is supplied, the network adapter attempts to negotiate duplex and flow control via the auto-negotiation protocol. If the link partner does not support Auto-negotiation, the network adapter bypasses the process and attempts to establish a link at 1000Mbps in full duplex.

Note
After the cable is properly connected at both ends, the adapter card LED should be functional. See Table 1 on page 18 for a description of LED operation.

Connecting an SFP Transceiver

The 2914SP and 2914GP/SP network adapters require an SFP transceiver and an appropriate cable to connect to the network.

1. Insert an SFP transceiver into the SFP slot on the network adapter until the SFP transceiver snaps into place in the slot.
2. Remove the plug from the SFP transceiver.
3. Connect one end of the cable to the SFP transceiver.
4. Connect the other end of the cable to the appropriate Ethernet network port or an appropriate port.

After the system is connected to the network and power is supplied, the network adapter attempts to establish the connection as follow:

- With a Gigabit SFP, the network adapter attempts to negotiate duplex and flow control via the Clause 37 Auto-Negotiation protocol. If the link partner does not support Auto-negotiation, the network adapter bypasses the process and attempts to establish a link at 1000Mbps in full duplex.
- With a 100Mbps SFP, the network adapter attempts to establish the connection at 100Mbps in full-duplex.

Chapter 3

Installing the Driver Software

This chapter describes how to install driver software for the 2914 series network adapter onto your Windows platform. It contains the following topics:

Overview

When you install the 2914 series network adapter in your computer, your next step is to install driver software onto your Windows operating system. You can install driver software using the Device Manager or the silent installation method.

The Device Manager guides you through the installation process. The silent installation method suppresses dialog boxes.

Guidelines

Here are the guidelines for installing and updating the driver software on your operating system:

- ❒ To install or update the driver software, you must have administrative privileges.
- ❒ When you install the 2914 network adapter on your computer and start the Windows system, it detects a new adapter and install a Broadcom driver; however, you must update the driver software that Allied Telesis provides for the 2914 network adapter. See "Installing the Driver Using Device Manager", or "Installing the Driver Using the Silent Installation Method".

Installing the Driver Using Device Manager

To install the driver software using the Device Manager, follow the steps below:

- ❒ "Downloading the Driver Software" on page 45
- ❒ "Installing the Driver Software" on page 47

Updating the Driver Using Device Manager

To update the driver software using the Device Manager, follow the steps below:

- ❒ "Downloading the Driver Software" on page 45
- ❒ "Updating the Driver Software" on page 50

Installing the Driver Using the Silent Installation Method

To install or update the driver software using the silent installation, follow the steps below:

- ❒ "Downloading the Driver Software" on page 45
- ❒ "Performing the Silent Installation" on page 52

Downloading the Driver Software

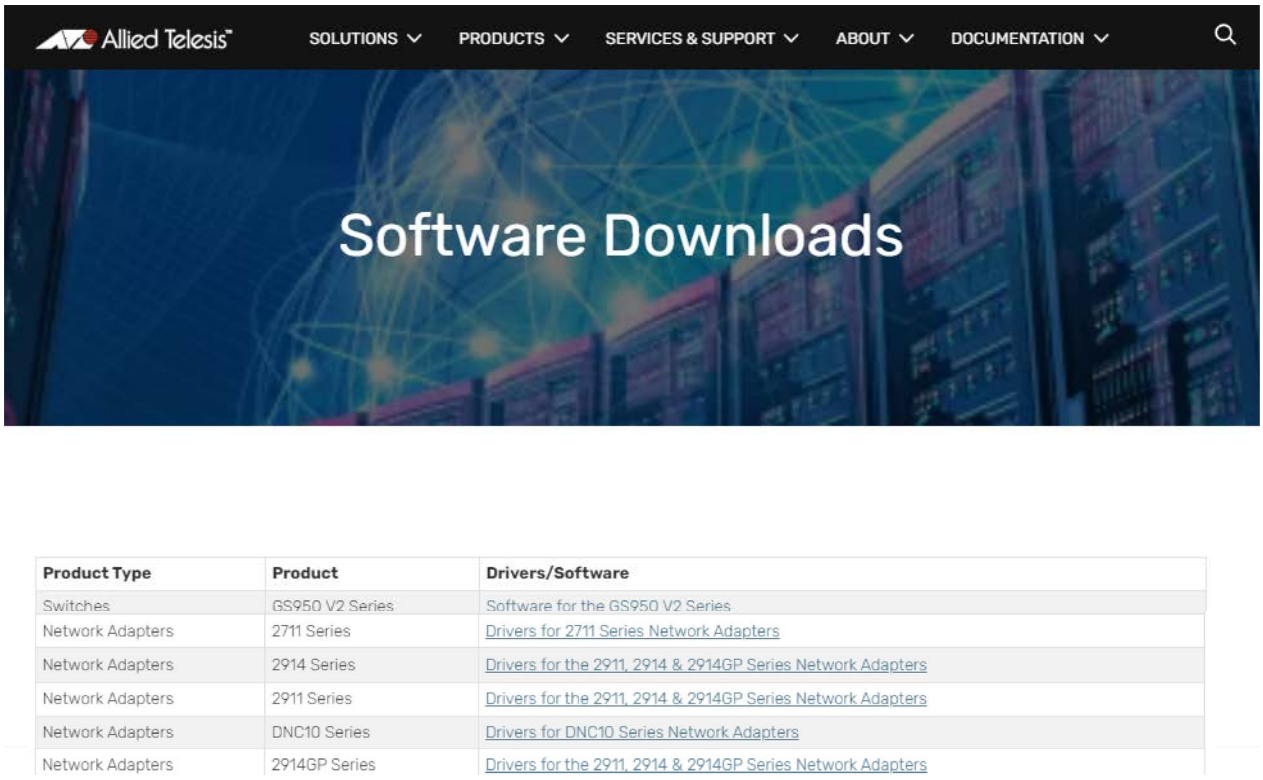
The driver for network adapters are available from the Allied Telesis website.

To download the driver software, do the following:

1. Open a web browser, such as Internet Explorer or FireFox, on your system.
2. Enter the following URL:

   http://www.alliedtelesis.com/support/software

   The Software Downloads page is displayed as shown in Figure 17.



Product Type	Product	Drivers/Software
Switches	GS950 V2 Series	Software for the GS950 V2 Series
Network Adapters	2711 Series	Drivers for 2711 Series Network Adapters
Network Adapters	2914 Series	Drivers for the 2911, 2914 & 2914GP Series Network Adapters
Network Adapters	2911 Series	Drivers for the 2911, 2914 & 2914GP Series Network Adapters
Network Adapters	DNC10 Series	Drivers for DNC10 Series Network Adapters
Network Adapters	2914GP Series	Drivers for the 2911, 2914 & 2914GP Series Network Adapters

Figure 17. Software Downloads Page

3. Find the driver for the 2914 network adapter and click the link.
4. Save the zip folder onto your system.

   The files should have the following extensions:

   - `.sys`
   - `.inf`
   - `.cat`

5. Transfer the files onto an external storage device, such as a flash drive.
6. Transfer the files into a folder on the host device with the 2914 network adapter.
7. Record the location of the folder with the driver files.
8. Perform one of the following options:
   - ❒ To install the driver with Device Manager, go to "Installing the Driver Software" on page 47.
   - ❒ To update the driver with Device manager, go to "Updating the Driver Software" on page 50.
   - ❒ To install the driver with silent installation, go to "Performing the Silent Installation" on page 52.

Installing the Driver Software

To install the driver software onto the 2914 network adapter for the first time, perform the following procedure:

> **Note**
> To install the driver software, you must have administrative privileges.

1. Open Device Manager.

   There are several ways to open Device Manger. One of them is by opening the Start button in the bottom left corner of the screen, type “device manager,” then click the Device Manger icon.

   The Device Manager window appears as shown in Figure 18.

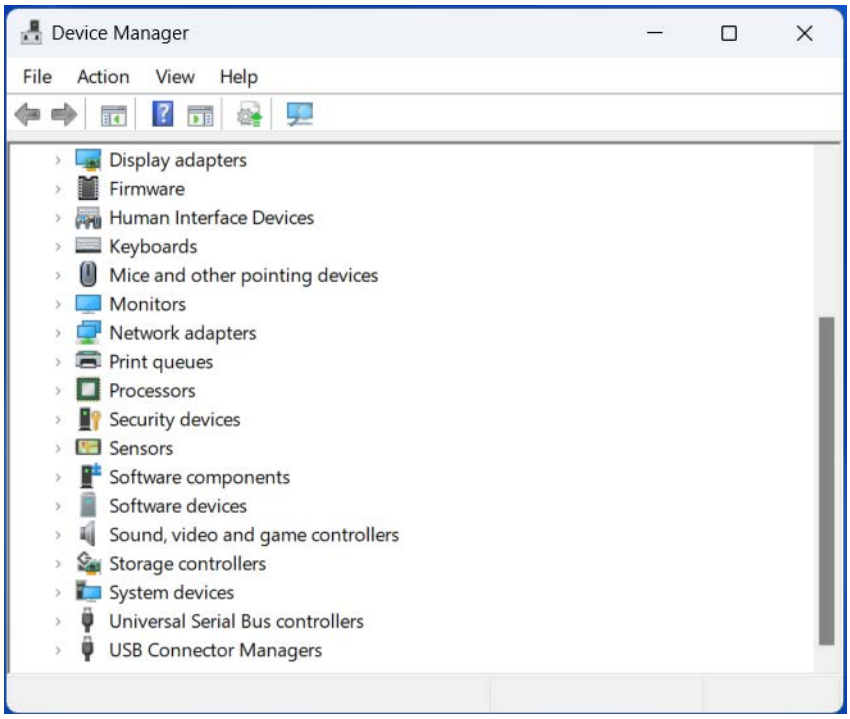


Figure 18. Device Manager

2. In the Device Manager window, double-click **Network adapters** to expand the field.

3. Right-click **Broadcom NetXtreme Ethernet Controller device** to display the shortcut menu.

4. In the shortcut menu, select **Update driver**. See Figure 19.

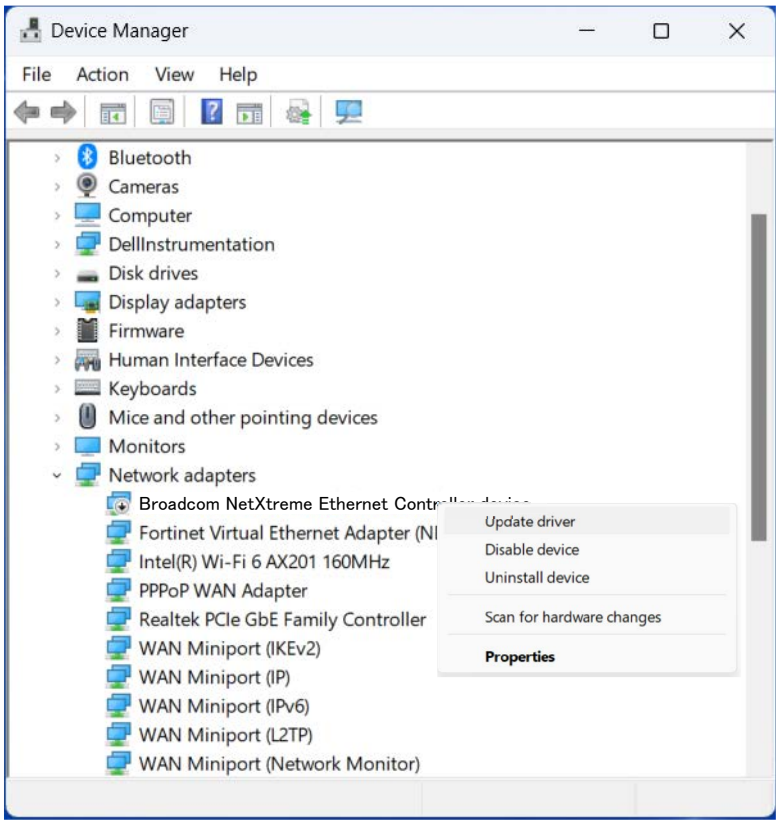


Figure 19. Ethernet Controller in Device Manager

The update driver window prompts you to select either **Search automatically for drivers** or **Browse my computer for drivers**.

5. Select **Browse my computer for drivers**.
6. Navigate folders and locate the driver that you placed for 2914 network adapter. See "Downloading the Driver Software" on page 45.
7. Click **Next**.

   The confirmation message appears when the driver software is successfully updated.
8. Click **Close**.
9. Go to "Completing the Adapter Driver Installation" on page 49.

Completing the Adapter Driver Installation

To complete the driver installation, restart the host device by performing this procedure:

1. Connect the network adapter to your network.
2. Restart your Windows operating system.

   Wait for the host device to restart the Windows operating system.
3. To test the network adapter, perform “Testing Network Connectivity” on page 109.
4. To configure the features and parameters on the new network adapter, go to Chapter 5, “Modifying Advanced Properties” on page 49.

Updating the Driver Software

To update the driver software, use the same procedure for installing the driver software for the first time. The only difference between updating and installing the driver software is the name of your network adapter that Device Manager detects and lists.

Device Manager lists your 2914 network adapter as *Allied Telesis AT-2914 Series Fiber Ethernet* once you installed the driver software. Before you install the driver software for the first time, Device Manager lists your adapter as a *Broadcom NetXtreme Ethernet Controller device*.

To update the driver software for your 2914 network adapter, perform the following procedure:

1. Open Device Manager.

   There are several ways to open Device Manger. One of them is by opening the Start button in the bottom left corner of the screen, type "device manager," then click the Device Manger icon.

   The Device Manager window appears as shown in Figure 18 on page 47.

2. In Device manger, double-click Network adapters to expand the field.

3. Right-click ***Allied Telesis AT-2914 Series Fiber Ethernet*** to display the shortcut menu.

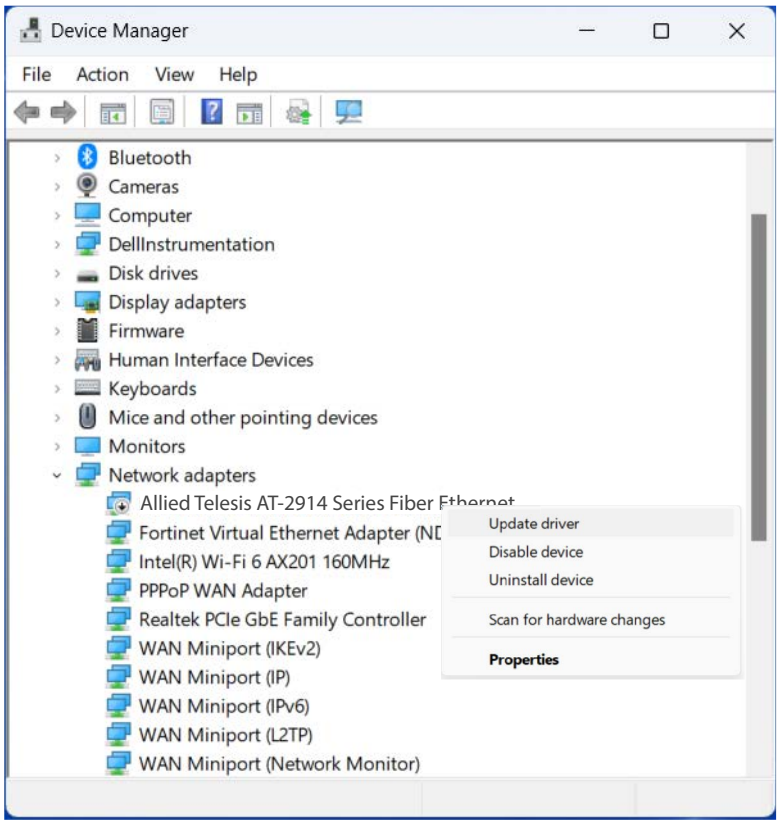


Figure 20. List of Network Adapters in Device Manager

4. In the shortcut menu, select **Update driver** as shown in Figure 20.

   The update driver window prompts you to select either **Search automatically for drivers** or **Browse my computer for drivers**.

5. Select **Browse my computer for drivers**.

6. Navigate folders and locate the driver that you placed for your 2914 network adapter. See “Downloading the Driver Software” on page 45.

7. Click **Next**.

   The confirmation message appears when the driver software is successfully updated.

8. Click **Close**.

Performing the Silent Installation

To simplify the driver installation process, you may perform a silent installation. The silent installation is a method of installing software in the silent mode without constant interactions by suppressing dialog boxes.

> **Note**
> You can apply the silent installation method only to Microsoft certified drivers. The drivers that Allied Telesis provides for the 2914 network adapters are all Microsoft certified.

Use a command line utility called Driver package Installer (DPInst) for the silent installation. DPInst is included in the Windows Developer Kit (WDK) provided by Microsoft. You can obtain the latest DPInst by downloading and installing the latest WDK from the Microsoft website.

Installing the Driver Silently

To install the driver silently, perform the following instructions:

1. Create a folder in your Windows system.
2. Download driver software for the 2914 network adapter.

   See "Downloading the Driver Software" on page 45.
3. Place the driver files that you downloaded into the folder that you created in step 1.

   The folder should include the following driver files:

   - `.sys`
   - `.inf`
   - `.cat`
4. Download the latest WDK to obtain the `dpinst` utility.

   Consult the Microsoft websites to download WDK.
5. Place the `dpinst.exe` and its supporting files in the same folder where you placed the driver files.

   You must place the 64-bit `dpinst` utility if your operating system is the 64-bit version. Place the 32-bit for `dpinst` utility for the 32-bit version operating system.
6. Open a command prompt window with administrator privileges.
7. Change the directory to the folder where the `dpinst` utility and the driver files reside.

8. Install the driver in the silent mode by entering the following command:

   ```
   > dpinst /S
   ```

   Note
   Adding the `/S` switch to the `dpinst` command suppresses the display of wizard pages, user dialog boxes, and other user intervention requests.

   The driver is installed silently.

Viewing Supported DPInst Options

You can display help information about the `dpinst` command-line options.

View all supported `dpinst` options by executing the following command:

1. Open a command prompt window with administrator privileges.
2. Change the directory to the folder where the `dpinst` utility and the driver files reside.

   ```
   > dpinst /?
   ```

   The command displays the help text.

3. Go to “Completing the Adapter Driver Installation” on page 49.

Chapter 4

Configuring the VLAN and Priority

This chapter describes how to access the CLI on the 2914GP/SP network adapter and change the VLAN and priority settings.

It contains the following topics:

Note
This chapter only applies to the 2914GP/SP model.

Overview

The 2914GP/SP network adapter has an internal CLI for you to modify the VLAN and priority settings through the Console port. To access the CLI, connect the adapter to your management PC and install a virtual serial port driver. After the driver is installed, you can access the CLI to modify the VLAN and priority settings using a terminal emulator program, such as Putty or TeraTerm, on the management PC.

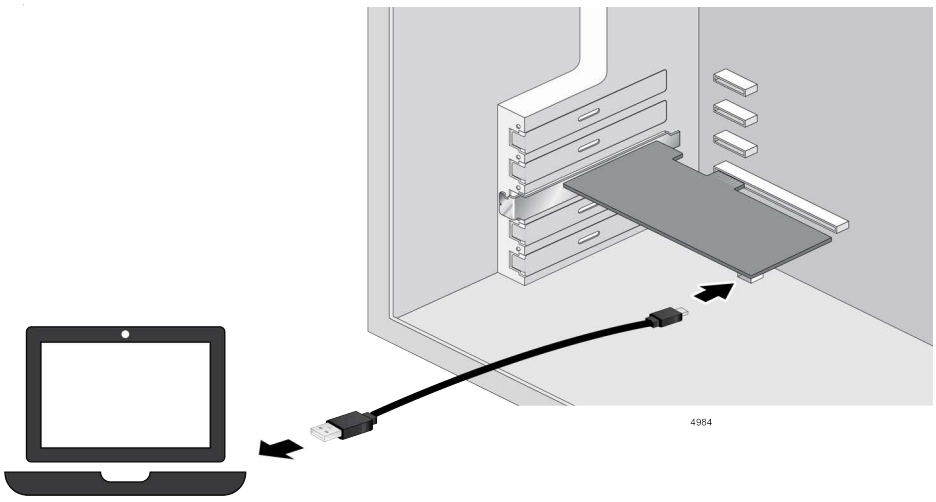


Figure 21. Accessing the CLI on the Adapter through the Console Port

Note
A management PC can be the PC that the 2914GP/SP adapter is installed on.

To access the CLI to modify the VLAN and priority settings, perform the following procedures:

- "Accessing the CLI on the 2914GP/SP Network Adapter" on page 57
- "Configuring the VLAN and Priority Settings on the Network Adapter" on page 60

Accessing the CLI on the 2914GP/SP Network Adapter

To modify VLAN and Priority settings on the 2914GP/SP adapter, you must access the CLI on the adapter.

Guidelines

Here are the guidelines for modifying the VLAN and priority settings of the 2914GP/SP adapter in CLI:

- ❒ To install or update serial port driver software, you must have administrative privileges.
- ❒ The Console port of the adapter is a USB Micro-B receptacle.

What to Prepare

Here is a list of items that you need to provide:

- ❒ A cable with a USB-A connector and USB Micro-B connector
- ❒ A management PC with a terminal emulator program, such as TeraTerm or Putty, installed

Note
A management PC can be the PC that the 2914GP/SP adapter is installed on.

Accessing the CLI on the Adapter for the First Time

To connect the 2914GP/SP adapter to a PC, perform the following procedures:

1. Connect the USB-A connector of the cable to the USB-A receptacle on a management PC.
2. Connect the other end of the cable, USB Micro-B connector, to the USB Micro-B receptacle on the 2914GP/SP adapter.

   If the management PC is connected to Internet, the serial port driver is automatically installed onto the laptop or PC.

   If the management PC is *not* connected to Internet, go to “Installing the Serial Port Driver Manually” on page 58 to download and install the driver.
3. Open the Device Manger on the management PC and expand the “Ports (COM & LTP)” tree.

   You see a Silicon Labs CP210x USB to UART Bridge (COM*n*) in the COM ports list as shown in Figure 22 on page 58.
4. Note the COM number (COM*n*).

   To access the CLI, you must have the COM number for the terminal emulator program when accessing the CLI.

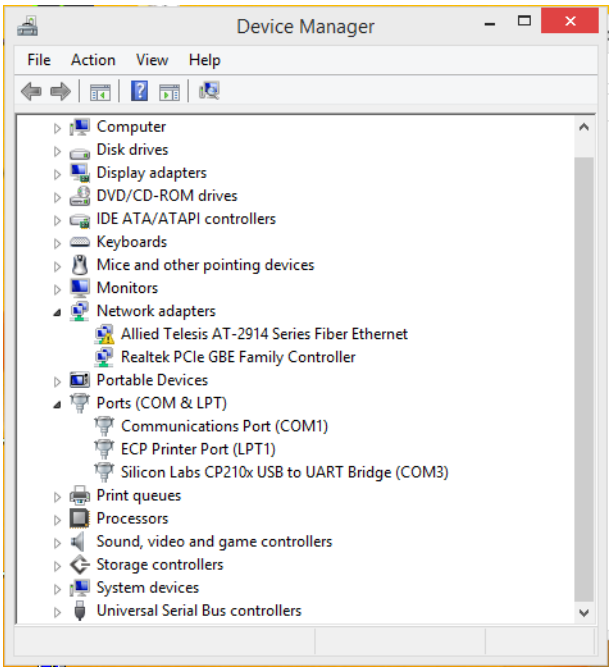


Figure 22. COM Ports In the Device Manager

5. If you do not see a Silicon Lab device in the list, the serial port driver installation failed. Go to "Installing the Serial Port Driver Manually" on page 58 to download and install the driver.

Installing the Serial Port Driver Manually

To download and install the serial port driver to the management laptop or PC, perform the following:

1. Go to SILISON LABS's website:

   www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers

2. Download driver software for your Windows version.

   The zip files are downloaded.

3. Unzip the zip files.

4. Find an appropriate executable and click it.

5. Follow the instructions to complete the installation.

6. Open the Device Manger on the laptop or PC and expand the "Ports (COM & LTP)" tree.

   You see the Silicon Lab device in the COM ports list.

Accessing the CLI Using a Terminal Emulator Program

To access the CLI on the adapter and modify VLAN and priority settings, perform the following procedure:

1. Connect the USB-A connector of the cable to the USB-A receptacle on a management PC.
2. Connect the other end of the cable, USB Micro-B connector, to the USB Micro-B receptacle on the 2914GP/SP adapter.
3. Start the terminal emulator program with the COM number that you noted from Device Manager.
4. Configure the terminal emulator program as follows:
   - Baud rate: 115200
   - Data bit: 8
   - Stop bit 1:
   - Parity: None
   - Flow control: None
5. Press Enter on the terminal emulator program on the management PC.

   The VLAN and Priority configuration menu is displayed as shown in Figure 23.

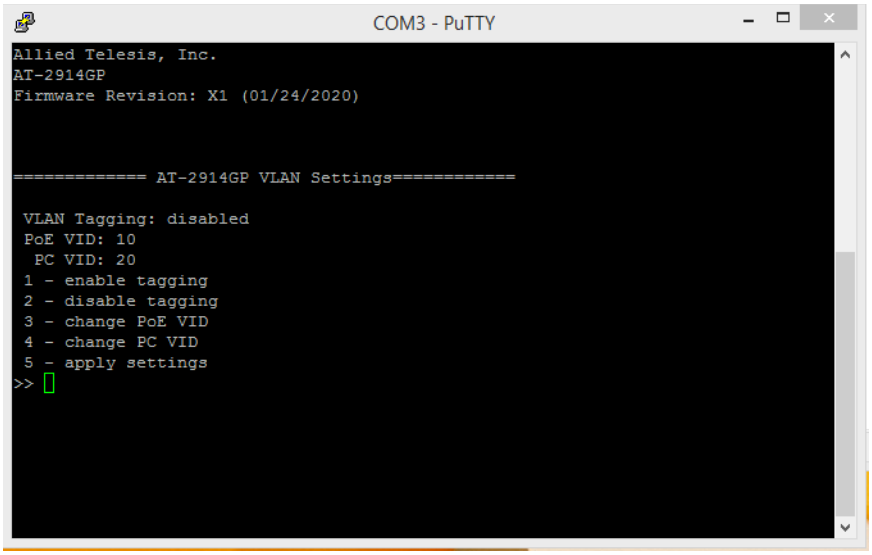


Figure 23. VLAN and Priority Configuration Window

6. To configure the VLAN and Priority settings, go to “Configuring the VLAN and Priority Settings on the Network Adapter” on page 60.

Configuring the VLAN and Priority Settings on the Network Adapter

You can specify or modify the VLAN and Priority settings on the 2914GP/SP adapter through the CLI. See Table 4.

Table 4. VLAN and Priority Settings

Item	Description
Device name	Displays the network adapter name.
FW	Displays the current console firmware revision.
VLAN and Priority Settings:	
VLAN Tagging	Displays the current tagging status. The options are enabled or disabled. The default is disabled.
PoE VID	Displays the VLAN ID for the PoE copper port. The default is 0. The range is 0 to 4095.
PoE QoS	Displays QoS priority level for the PoE copper port. The default is 0. The range is 0 to 7.
PC VID	Displays the VLAN ID for the PC traffic. The default is 0.
PC QoS	Displays the QoS priority level for the PC traffic. The default is 0.
VLAN and Priority Setting Commands:	
1	Enable VLAN tagging.
2	Disable VLAN tagging.
3	Change the VLAN ID for the PoE copper port.
4	Change the QoS priority level for the PoE copper port.
5	Change the VLAN ID for the PC traffic.
6	Change the QoS priority level for the PC traffic.
7	Saves and Applies the VLAN settings.

Enabling the VLAN Tagging

When the VLAN tagging is enabled on the adapter, VLAN and Priority tags are added to Ethernet frames.

> **Note**
> Make sure that the Priority & VLAN setting in the Advanced Properties is disabled. To see and disable the setting, see “Priority & VLAN” on page 86.

To enable the VLAN tagging, perform the following procedure:

1. Enter 1 at the Console prompt:

   ```
   >> 1
   ```

   A “VLAN Enabled” prompt is displayed.

2. Press Enter to continue.

   The “please apply settings” prompt is displayed to indicate changes have been made but not yet applied.

3. Enter 7 at the Console prompt to apply the change:

   ```
   >> 7
   ```

   VLAN Configuration Applied prompt is displayed.

4. Press Enter to continue.

Disabling the VLAN Tagging

When the VLAN tagging is disabled on the adapter, no VLAN and Priority tags are added.

To disable the VLAN tagging, perform the following procedure:

1. Enter 2 at the Console prompt:

   ```
   >> 2
   ```

   A “VLAN Disabled” prompt is displayed.

2. Press Enter to continue.

   The “please apply settings” prompt is displayed to indicate changes have been made but not yet applied.

3. Enter 7 at the Console prompt to apply the change:

   ```
   >> 7
   ```

   A “NIC must be REMOVED to disable VLAN” prompt is displayed.

4. Press Enter to continue.

5. Close the serial console and power down the system.
6. Remove and re-install the 2914GP/SP network adapter.
7. Power on the system.

   The VLAN Tagging is now disabled.

Changing the VLAN ID for the PoE Copper Port

You can specify the VLAN ID for the PoE copper port. The default setting is 0.

To specify the PoE VID, perform the following procedure:

1. Enter 3 at the Console prompt:

   >> 3

   A "New VID (decimal)" prompt is displayed.
2. Enter the new VID and press Enter.

   The "please apply settings" prompt is displayed to indicate changes have been made but not yet applied.
3. Enter 7 at the Console prompt to apply the new setting:

   >> 7

   VLAN Configuration Applied prompt is displayed.
4. Press Enter to continue.

Changing the QoS Priority Level for the PoE Copper Port

You can specify the QoS priority level for the PoE copper port. The default setting is 0.

To specify the PoE VID, perform the following procedure:

1. Enter 4 at the Console prompt:

   >> 4

   A "New QoS (decimal)" prompt is displayed.
2. Enter the new QoS priority level and press Enter.

   The "please apply settings" prompt is displayed to indicate changes have been made but not yet applied.
3. Enter 7 at the Console prompt to apply the new setting:

   >> 7

   VLAN Configuration Applied prompt is displayed.

4. Press Enter to continue.

Changing the VLAN ID for the PC Traffic

You can specify the VLAN ID for the PC traffic. The default setting is 0.

To specify the VLAN ID for the PC traffic, perform the following procedure:

1. Enter 5 at the Console prompt:

   >> 5

   A “New VID (decimal)” prompt is displayed.

2. Enter the new VID and press Enter.

   The “please apply settings” prompt is displayed to indicate changes have been made but not yet applied.

3. Enter 7 at the Console prompt to apply the new setting:

   >> 7

   VLAN Configuration Applied prompt is displayed.

4. Press Enter to continue.

Changing the QoS Priority Level for the PC Traffic

You can specify the QoS priority level for the PC traffic. The default setting is 0.

To specify the QoS priority level for the PC traffic, perform the following procedure:

1. Enter 6 at the Console prompt:

   >> 6

   A “New QoS (decimal)” prompt is displayed.

2. Enter the new QoS priority level and press Enter.

   The “please apply settings” prompt is displayed to indicate changes have been made but not yet applied.

3. Enter 7 at the Console prompt to apply the new setting:

   >> 7

   VLAN Configuration Applied prompt is displayed.

4. Press Enter to continue.

Chapter 5

Configuring a VoIP Phone System

This chapter describes how to configure a VoIP phone system using the 2914GP/SP network adapter. It contains the following topics:

Overview

The 2914GP/SP network adapter is installed on a PC and connects the PC to the Ethernet network through the fiber optic port and a Powered Device (PD) through the PoE+ copper port. A PD is a device powered through an Ethernet cable by a Power Supply Equipment (PSE). A PC with the 2914GP/SP network adapter is a PSE; a VoIP phone, Wi-Fi access point, and security camera are PD's.

Figure 24 illustrates the configuration of the PC's and VoIP phones as an example using the 2914GP/SP network adapters.

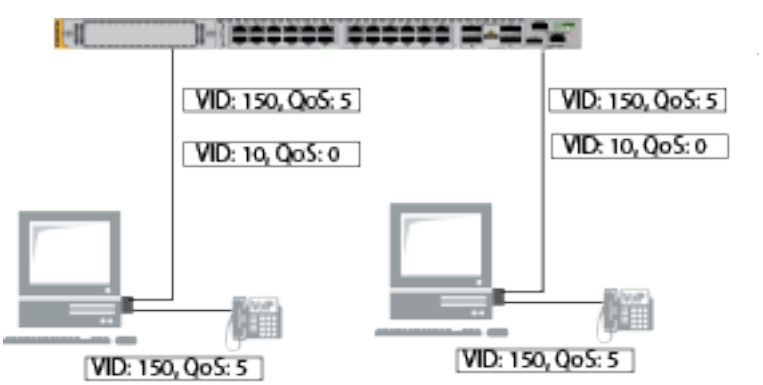


Figure 24. VoIP Phone Configuration Example

When you connect VoIP phones to your network through PCs, you should separate voice traffic from data traffic using VLAN because voice traffic must have higher priority over other types of traffic.

When VLAN's are enabled and configured, incoming traffic on the fiber link are routed to the copper port or the PC, depending on the VLAN ID in the frames. Tagged frames with unmatched VLAN ID and untagged frames are discarded. Outbound traffic from the PC and VoIP phone are sent to the switch on the fiber link.

In the Figure 24, you assign the VLAN ID 150 and QoS 5 to VoIP voice traffic from the copper port and the VLAN ID 10 and QoS 0 to the PC traffic. The voice traffic has the higher priority (QoS 5) than the PC traffic (QoS 0).

When frames from the copper port does not have a VLAN ID assigned, these frames remain untagged when they arrive at the switch. For more tagging examples, See "Configuring VLAN Tagging on Adapter Ports" on page 67.

To assign a VLAN ID and priority for the PC traffic and traffic from the copper port, see Chapter 4, "Configuring the VLAN and Priority" on page 55.

Configuring VLAN Tagging on Adapter Ports

To separate voice traffic coming from the VoIP phone from data traffic from the PC, several combinations of VLAN tagging settings are possible.

VLAN Tagging Combinations

Figure 25 illustrates possible VLAN tagging combinations. In this example, voice frames belong to the VLAN 150 and data frames belong to the VLAN 10 except Config. 3.

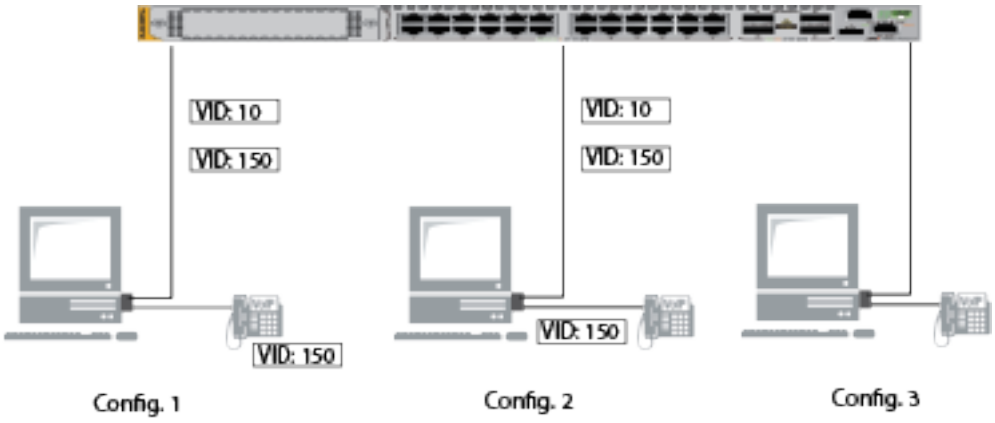


Figure 25. VoIP Phone Tagging Example

Table 5 shows VLAN tagging combinations.

Table 5. VLAN Tagging Combinations

	Config. 1	Config. 2	Config. 3
VoIP Phone	VLAN tag (VID: 150) (In Phone Setting)	-	-
VoIP Data Traffic	-	VLAN tag (VID: 150) (Set using the adapter's CLI)	Untagged
PC Data Traffic	Untagged or VLAN tag (VID: 10) (Set VID in the Advanced Properties. See "VLAN ID" on page 95.)	VLAN tag (VID: 10) (Set using the adapter's CLI)	Untagged

Using VLAN-Capable VoIP Phones to Set VLAN

Some VoIP phones are capable of VLAN tagging. In Config 1 using a VLAN-capable VoIP phone, you may assign the VLAN ID 150 using the VoIP phone setting. Voice frames get the VLAN tagged at the phone, are sent to the copper port and transmitted to the switch through the fiber port. The voice frames and VLAN tags are unchanged by the 2914GP/SP adapter.

You can assign a VLAN ID to the PC traffic using the adapter's Advanced Properties; however, when voice frames are tagged at the VoIP phone, do *not* enable VLAN via the 2914GP/SP adapter's CLI.

Using 2914GP/SP to Set VLAN

Config 2 is a configuration when a VoIP phone is *not* capable of VLAN tagging, or you prefer to set up VLAN's at the network adapter. You can assign the VLAN ID 150 to the copper port via the adapter's CLI. Voice frames from the VoIP phone get tagged when they arrive at the copper port and are sent to the switch through the fiber optic port. The voice frames are unchanged by the 2914GP/SP adapter. The VLAN ID 10 is added to PC traffic as they are sent out the fiber link.

Non-VLAN Application

You can leave the PC traffic and traffic from the VoIP phone untagged as with Config 3.

Chapter 6

Modifying Advanced Properties

This chapter includes the following topics:

Overview

The 2914 series network adapters allow you to modify advanced properties to meet your requirements. To access the advanced properties, access Device Manager, then go to each advanced property page.

Guidelines

Here are the guidelines to modifying the advanced properties:

- To change the advanced property settings, you must have Administrator privileges.
- When you upgrade the driver software, the settings of the advanced properties may change. Verify the settings after upgrading the driver software.

Accessing Advanced Properties

To modify advanced properties, first access Device Manager, open the properties of your adapter, and select a feature you want to change its setting.

1. Access Device Manager. See “Installing the Driver Software” on page 47.

2. In the Device Manager window, double-click **Allied Telesis 2914 Series Fiber Ethernet**.

   The properties window pops up.

3. Click the **Advanced** tab.

   The Advanced Properties window opens as shown in Figure 26.

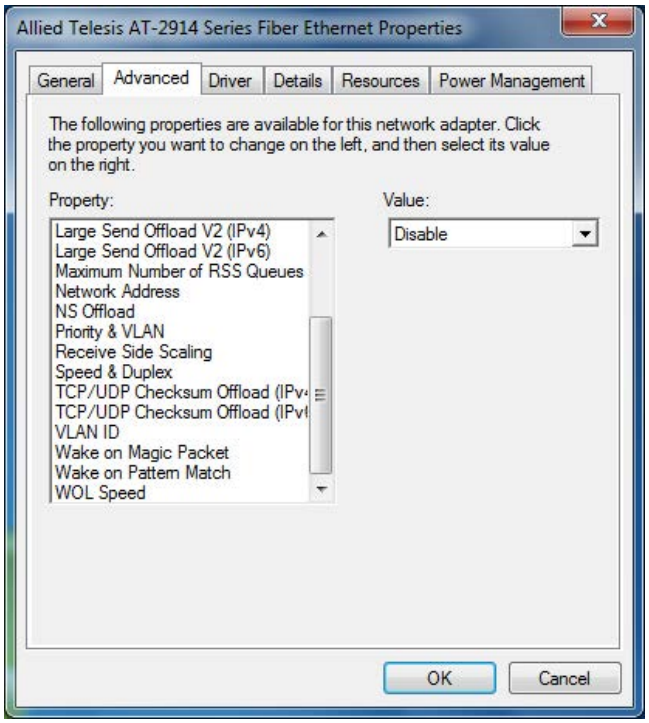


Figure 26. Advanced Properties Window

802.3az EEE

The 802.3az EEE (Energy Efficient Ethernet) property allows you to optimize the energy usage of the interface over Ethernet.

> **Note**
> The setting is always disabled on the 2914 series adapter.

To view the 802.3az EEE feature, do the following:

1. Access the Advanced Properties.

   See "Accessing Advanced Properties" on page 71.

2. Select **802.3az EEE** in the Property box.

   The 802.3az EEE page is displayed as shown in Figure 27.

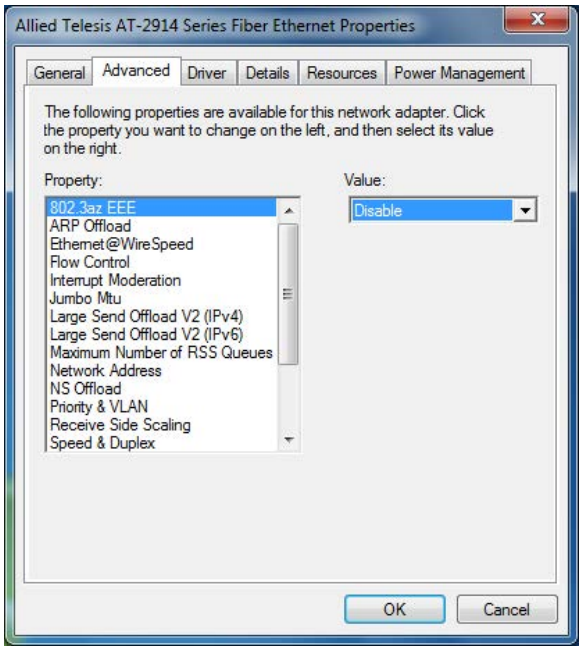


Figure 27. 802.3az EEE Page

3. Click **OK**.

ARP Offload

The ARP Offload feature enables the adapter not to wake up when responding to an ARP request. ARP is used to verify whether a computer is still present on the network and resolve an IP address into a MAC address.

To enable or disable the ARP Offload feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **ARP Offload** in the Property box.

   The ARP Offload page is displayed as shown in Figure 28.

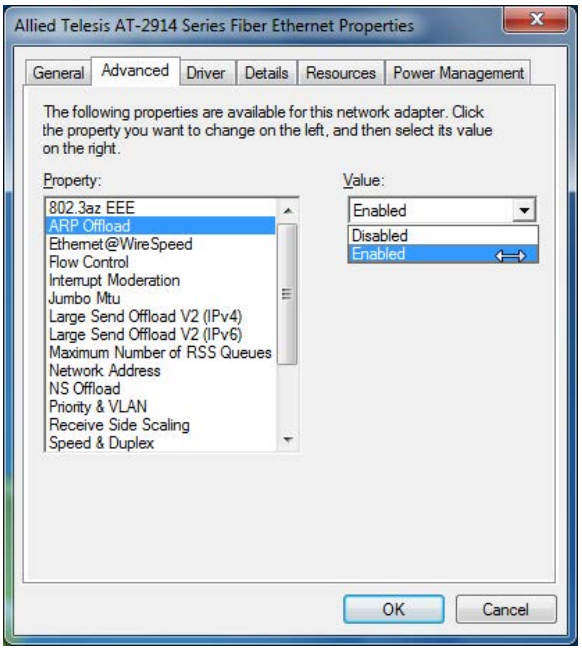


Figure 28. ARP Offload Page

3. Select one of the following options:

   - **Disable —** This feature is disabled.
   - **Enable —** The adapter does not wake up when responding to an ARP request. This is the default setting.

4. Click **OK**.

Ethernet@WireSpeed

The Ethernet@WireSpeed feature connects two devices even when the devices are connected through an impaired copper cable.

> **Note**
> The setting is always disabled on the 2914 series adapter.

To view the Ethernet@WireSpeed setting, do the following:

1. Access the Advanced Properties.

   See "Accessing Advanced Properties" on page 71.

2. Select **Ethernet@WireSpeed** in the Property box.

   The Ethernet@WireSpeed page is displayed as shown in Figure 29.

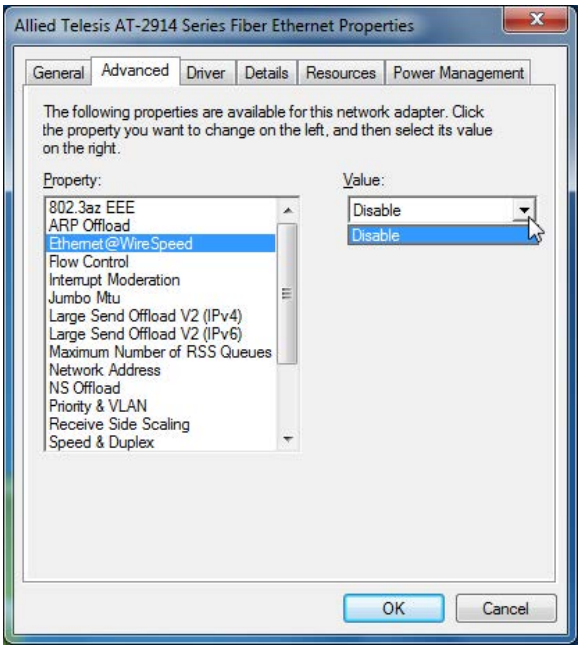


Figure 29. Ethernet@WireSpeed Page

3. Click **OK**.

Flow Control

The Flow Control feature allows you to control the flow between the 2914 adapter port and its link partner. You can enable or disable the adapter port to process received PAUSE frames and transmit PAUSE frames.

To enable or disable the Flow Control feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **Flow Control** in the Property box.

   The Flow Control page is displayed as shown in Figure 30.

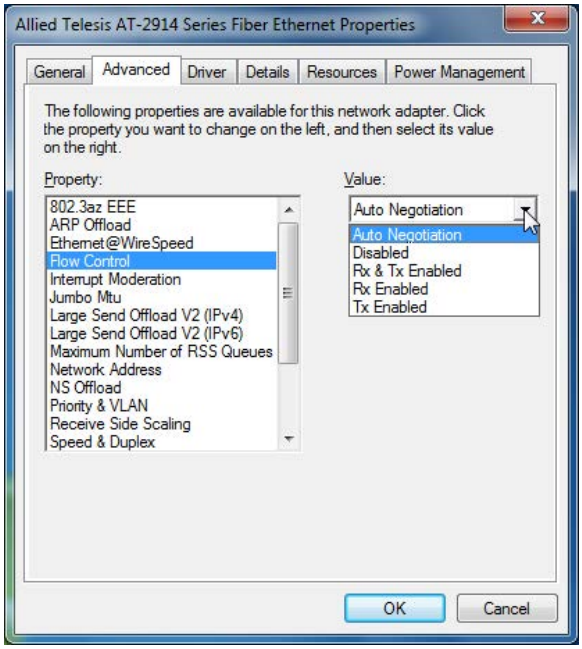


Figure 30. Flow Control Page

3. Select one of the following options if available:

   Note
   The options and default setting depend on your operating system and the version of the driver that you installed.

   - **Auto Negotiation —** The setting of the Flow Control property is determined during the auto-negotiation process.
   - **Disabled —** The adapter ignores PAUSE frames.

- **Tx & Rx Enabled —** The adapter processes ingress PAUSE frames and transmits PAUSE frames.
- **Rx Enabled —** The adapter processes ingress PAUSE frames, but does *not* transmit PAUSE frames.
- **Tx Enabled —** The adapter transmits PAUSE frames, but ignores PAUSE frames when receiving.

4. Click **OK**.

Interrupt Moderation

The Interrupt Moderation feature allows you to limit the rate of interrupts to the CPU during packet transmission and packet reception. When this feature is enabled, interrupts are handled as a group so that the CPU utilization decreases; however, the latency may increase.

To enable or disable the Interrupt Moderation feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **Interrupt Moderation** in the Property box.

   The Interrupt Moderation page is displayed as shown in Figure 31.

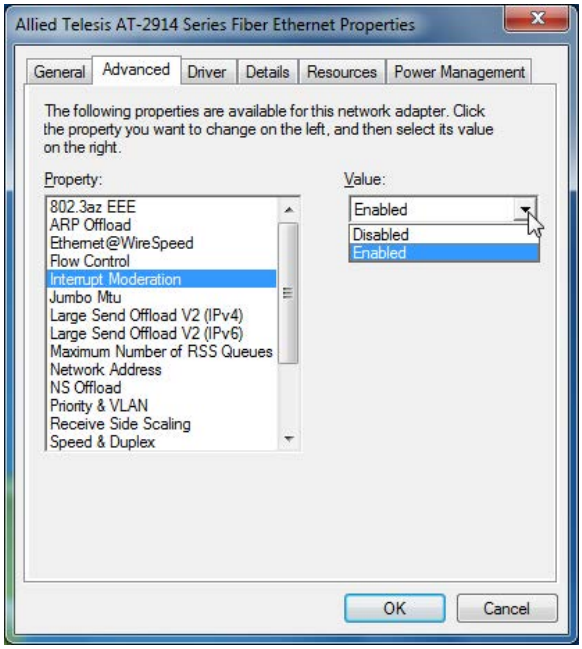


Figure 31. Interrupt Moderation Page

3. Select one of the following options:

   - **Disable —** The Interrupt Moderation feature is disabled
   - **Enable —** The Interrupt Moderation feature is enabled. This is the default setting.

4. Click **OK**.

Jumbo Mtu

The Jumbo Mtu (Maximum transmission unit) feature allows you to specify the maximum size of Ethernet frames that the adapter port supports. The network performance usually improves when the larger frame size is specified; however, the network must be capable of supporting the oversized Ethernet frames.

To change the Jumbo Mtu setting, do the following:

1. Access the Advanced Properties.

   See "Accessing Advanced Properties" on page 71.

2. Select **Jumbo Mtu** in the Property box.

   The Jumbo Mtu page is displayed as shown in Figure 32.

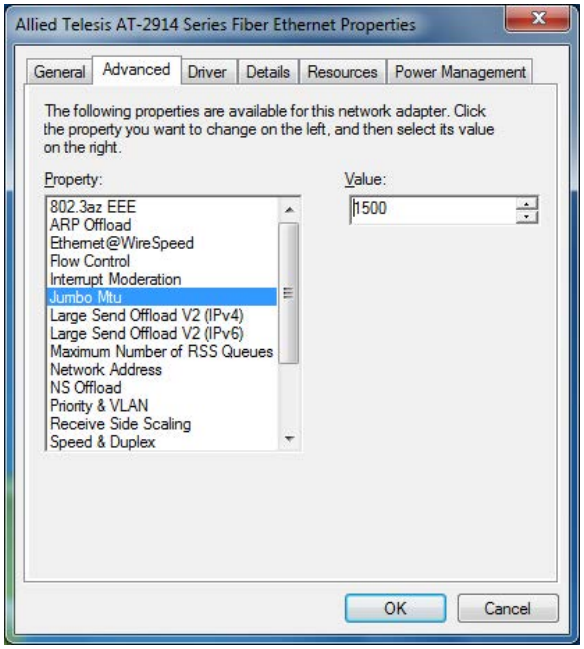


Figure 32. Jumbo Mtu Page

3. Specify the size of the frame in the Value box.

   The range of the value is from 1,500 to 9,000. The default value is 1,500.

4. Click **OK**.

Large Send Offload v2 (IPv4)

The Large Send Offload v2 (IPv4) feature allows you to control the load of sending out large packets. When this feature is enabled, the adapter port segments large packets for IPv4 traffic and reduces the CPU load.

This feature, which supports large packets up to 256kb, overrides the Large Send Offload (IPv4) feature if both features are enabled.

To enable or disable the Large Send Offload v2 (IPv4) feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **Large Send Offload v2 (IPv4)** in the Property box.

   The Large Send Offload v2 (IPv4) page is displayed as shown in Figure 33.

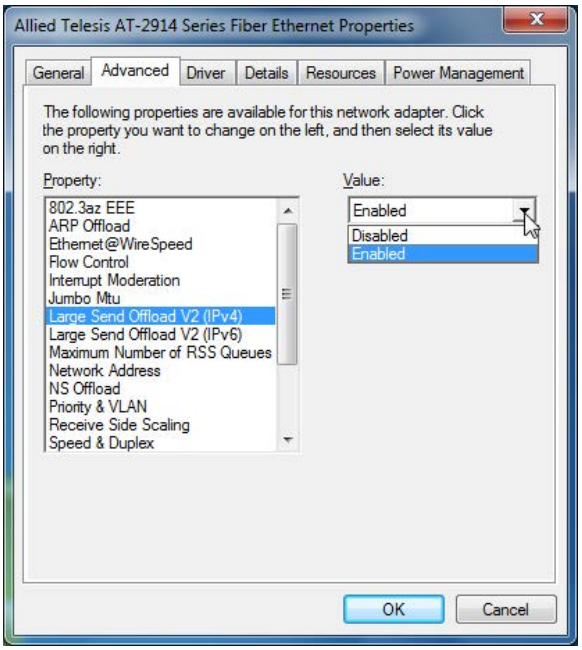


Figure 33. Large Send Offload v2 (IPv4) Page

3. Select one of the following options:

   - **Disable —** The feature is disabled.
   - **Enable —** The adapter port segments large packets up to 256kb for IPv4 traffic before sending them out. This is the default setting.

4. Click **OK**.

Large Send Offload v2 (IPv6)

The Large Send Offload v2 (IPv6) feature allows you to control the load of sending out large packets. When this feature is enabled, the adapter port segments large packets for IPv6 traffic and reduces the CPU load.

To enable or disable the Large Send Offload v2 (IPv6) feature, do the following:

1. Access the Advanced Properties.

   See "Accessing Advanced Properties" on page 71.

2. Select **Large Send Offload v2 (IPv6)** in the Property box.

   The Large Send Offload v2 (IPv6) page is displayed as shown in Figure 34.

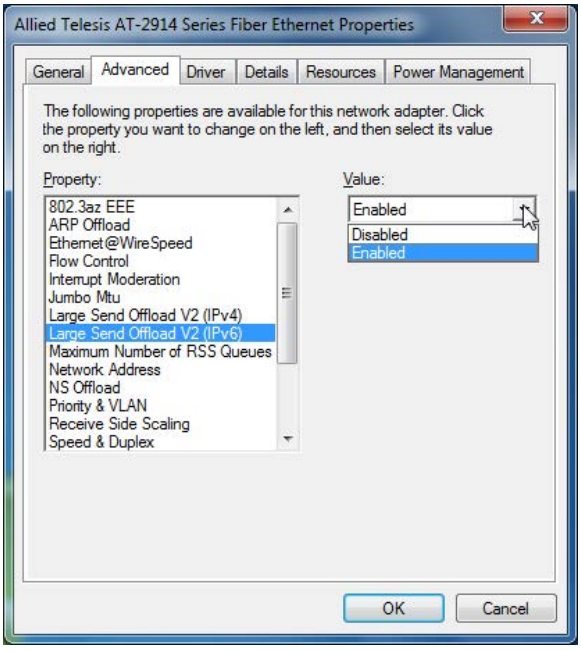


Figure 34. Large Send Offload (IPv6) Page

3. Select one of the following options:

   - **Disable —** The adapter does not segment packets for IPv6 traffic.
   - **Enable —** The adapter port segments large packets up to 256kb for IPv6 traffic before sending them out. This is the default setting.

4. Click **OK**.

Maximum Number of RSS Queues

The RSS Queues feature assigns data to queues associated with physical CPU cores. You can specify the maximum number of RSS queues that the network adapter assigns receiving data to.

To specify or change the maximum number of RSS Queues, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **Maximum Number of RSS Queues** in the Property box.

   The Maximum Number of RSS Queues page is displayed as shown in Figure 35.

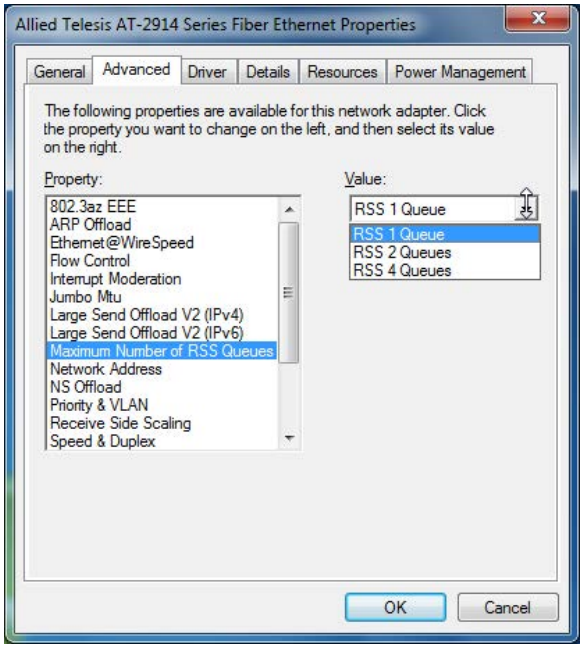


Figure 35. Maximum Number of RSS Queues Page

3. Select one of the following options:

Note
The supported number of RSS queues and default setting depend on the network adapter and operation system. You might not see all options listed below.

- **RSS 4 Queues —** The system allocates up to four RSS queues.
- **RSS 1 Queue —** The system allocates up to one RSS queue.
- **RSS 2 Queue —** The system allocates up to two RSS queues.

4. Click **OK**.

Network Address

The Network Address property allows you to replace the MAC address originally assigned to the adapter with a user-defined address. The user-defined address that you assign to the adapter is called a locally administered address.

Caution
A locally administered address overrides the original MAC address stored in the hardware. When you change the MAC address, be sure to assign a unique MAC address. **E81**

To assign or change the Network Address, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **Network Address** in the Property box.

   The Network Address page is displayed as shown in Figure 36.

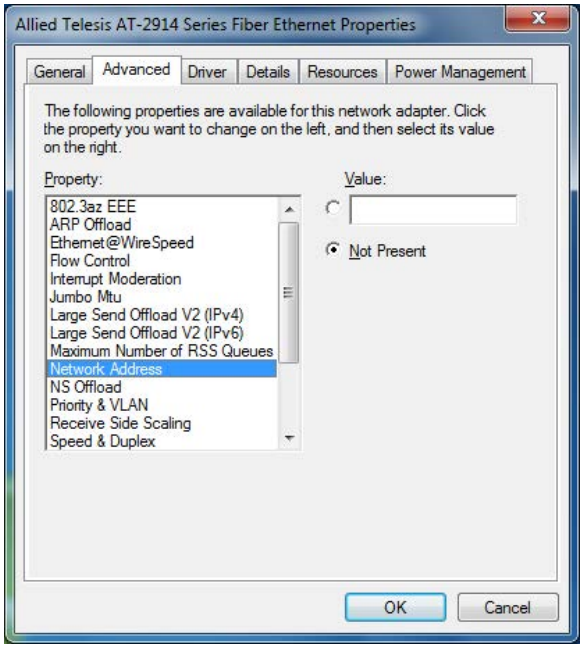


Figure 36. Network Address Page

3. In the **Value** text box, enter a locally administered address for the 2914 network adapter.

   By default, no locally administered address is assigned.

   Here are guidelines to assigning a locally administered address:

   - ❒ The address must be unique.
   - ❒ The address consists of a 12-digit hexadecimal number, for example, "000C46005501."
   - ❒ The range is from 0000 0000 0001 to FFFF FFFF FFFD excluding multicast MAC addresses, which cannot be used. The multicast MAC address has the least significant bit of the most significant octet as 1.

4. Click **OK**.

NS Offload

The NS (Neighbor Solicitation) Offload feature enables the adapter not to wake up when responding to an NS request.

To enable or disable the NS Offload feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **NS Offload** in the Property box.

   The NS Offload page is displayed as shown in Figure 37.

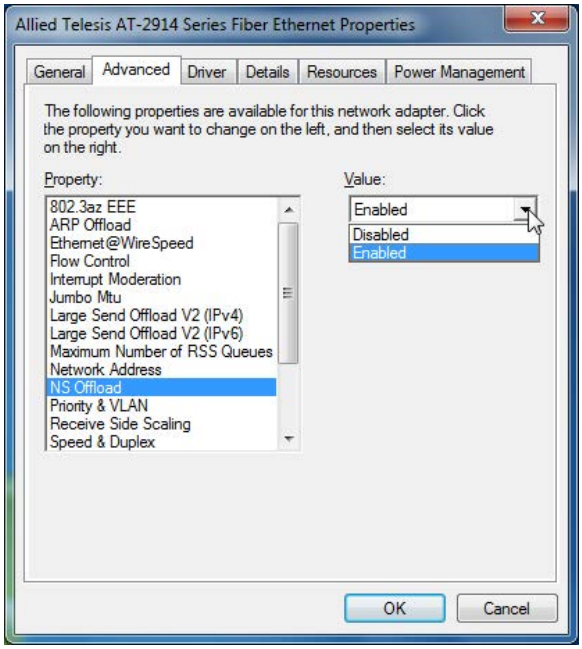


Figure 37. NS Offload Page

3. Select one of the following options:

   - **Disable —** This feature is disabled.
   - **Enable —** The adapter does not wake up when responding to an NS request. This is the default setting.

4. Click **OK**.

Priority & VLAN

The Priority & VLAN feature allows you to control sending and receiving tagged frames of QoS and VLAN.

When the property is set to Priority & VLAN Enabled, the adapter sends and receives QoS and VLAN tagged frames; with Priority Enabled, the adapter sends and receives QoS tagged frames; with VLAN Enabled, the adapter sends and receives VLAN tagged frames. To assign a VLAN ID to the adapter, see "VLAN ID" on page 95.

Note
The Priority & VLAN should always be disabled when you add VLAN tags via the 2914GP/SP adapter's CLI.

To enable or disable the Priority & VLAN feature, do the following:

1. Access the Advanced Properties.

   See "Accessing Advanced Properties" on page 71.

2. Select **Priority & VLAN** in the Property box.

   The Priority & VLAN page is displayed as shown in Figure 38.

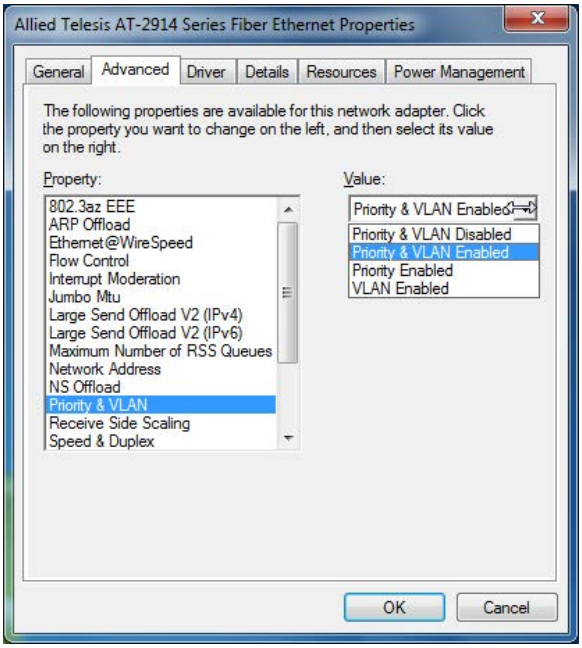


Figure 38. Priority & VLAN Page

3. Select one of the following options:

   - **Priority & VLAN Enabled —** The adapter sends and receives QoS and VLAN tagged frames. This is the default setting.
   - **Priority & VLAN Disabled —** The adapter does not send and ignores QoS and VLAN tagged frames.

   Note
   Select this option when adding VLAN tags via the 2914GP/SP adapter's CLI.

   - **Priority Enabled —** The adapter sends and receives QoS tagged frames.
   - **VLAN Enabled —** The adapter sends and receives VLAN tagged frames.

4. Click **OK**.

Receive Side Scaling

The Receive Side Scaling (RSS) feature allows the adapter to efficiently distribute receive processing across multiple CPU's and to prevent from overloading a single CPU. To make this feature effective, the computer must have multiple CPU's in a multiprocessor system.

To enable or disable the Receive Side Scaling feature, do the following:

1. Access the Advanced Properties.

   See "Accessing Advanced Properties" on page 71.

2. Select **Receive Side Scaling** in the Property box.

   The Receive Side Scaling page is displayed as shown in Figure 39.

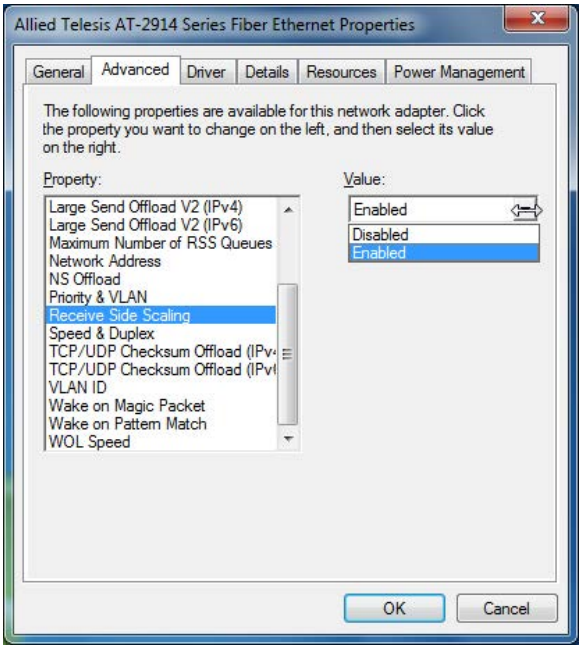


Figure 39. Receive Side Scaling Page

3. Select one of the following options:

   - **Enable —** Receiving data is processed by multiple CPU's. This is the default setting.
   - **Disable —** Receiving data is processed by a single CPU.

4. Click **OK**.

Speed & Duplex

The Speed & Duplex property is set to Auto-negotiation.

Note
The setting is always Auto-negotiation for the 2914 series adapter.

When the system is connected to the network and power is supplied, a network adapter attempts as follows:

- The 2914SX/SC and 2914SX/LC adapters attempt to negotiate duplex and flow control. If the link partner does not support Auto-negotiation, the network adapter bypasses the process and attempts to establish at 1000Mbps in full duplex.
- The 2914SP and 2914GP/SP adapters with a Gigabit SFP transceiver attempt to negotiate duplex and flow control.If the link partner does not support Auto-negotiation, the network adapter bypasses the process and attempts to establish at 1000Mbps in full duplex.
- The 2914SP and 2914GP/SP adapters with a 100Mbps SFP transceiver attempt to establish at 100Mbps in full duplex.
- The copper port of the 2914GPSP adapter always auto-negotiates. It supports 10/100/1000Base-T and negotiates with the link partner to the highest common denominator.

To view the Speed & Duplex property, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **Speed & Duplex** in the Property box.

   The Speed & Duplex page is displayed as shown in Figure 40 on page 90.

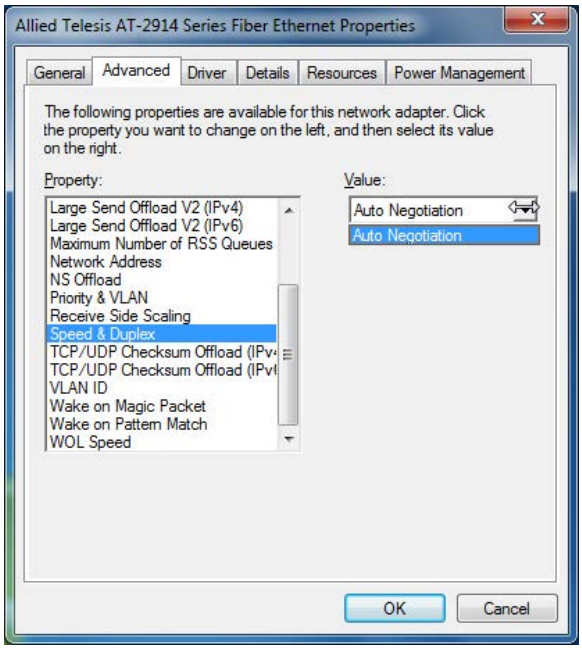


Figure 40. Speed & Duplex Page

3. Click **OK**.

TCP/UDP Checksum Offload (IPv4)

The TCP/UDP Checksum Offload (IPv4) function enables the adapter port to compute the checksum of transmitting IPv4 packets and verify the checksum of receiving IPv4 packets, taking load off from the CPU.

To modify the TCP/UDP Checksum Offload (IPv4) setting, do the following:

1. Access the Device Manager on your operating system.

   See “Accessing Advanced Properties” on page 71.

2. Select **TCP/UDP Checksum Offload (IPv4)** in the Property box.

   The TCP/UDP Checksum Offload (IPv4) page is displayed as shown in Figure 41.

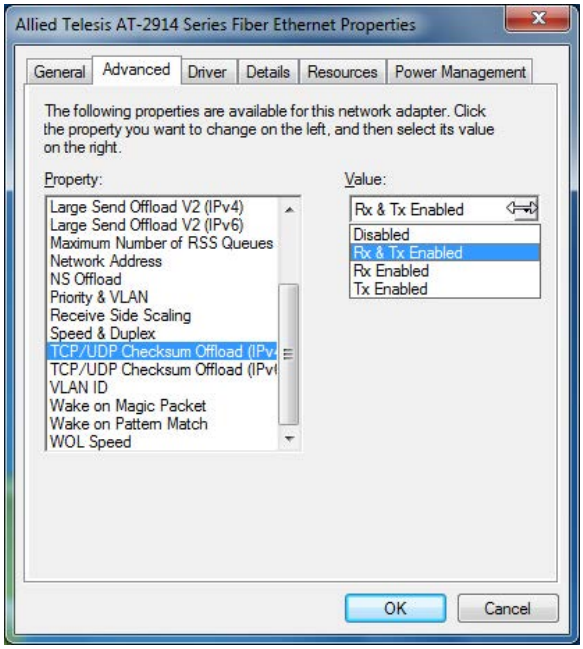


Figure 41. TCP/UDP Checksum Offload (IPv4) Page

3. Select one of the following options:

   - **Rx & Tx Enabled —** Enables the TCP/UDP Checksum Offload (IPv4) function for both receiving and transmitting IPv4 packets. This is the default setting.
   - **Disabled —** Disables the TCP/UDP Checksum Offload (IPv4) function for both receiving and transmitting.

- **Rx Enabled —** Enables the TCP/UDP Checksum Offload (IPv4) function only for receiving IPv4 packets.
- **Tx Enabled —** Enables the TCP/UDP Checksum Offload (IPv4) function only for transmitting IPv4 packets.

4. Click **OK**.

TCP/UDP Checksum Offload (IPv6)

The TCP/UDP Checksum Offload (IPv6) function enables the adapter port to compute the checksum of transmitting IPv6 packets and verify the checksum of receiving IPv6 packets, taking load off from the CPU.

To enable or disable the TCP/UDP Checksum Offload (IPv6) feature, do the following:

1. Access the Device Manager on your operating system.

   See “Accessing Advanced Properties” on page 71.

2. Select **TCP/UDP Checksum Offload (IPv6)** in the Property box.

   The TCP/UDP Checksum Offload (IPv6) page is displayed as shown in Figure 42.

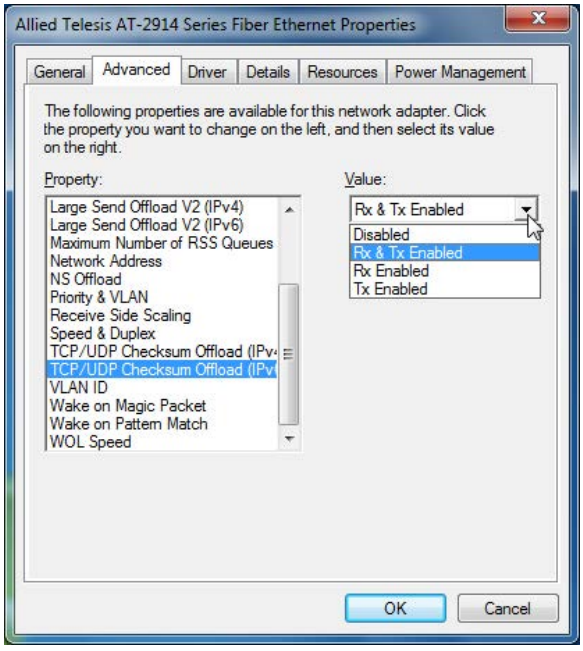


Figure 42. TCP/UDP Checksum Offload (IPv6) Page

3. Select one of the following options:

   - **Rx & Tx Enabled —** Enables the TCP/UDP Checksum Offload (IPv6) function for both receiving and transmitting IPv6 packets. This is the default setting.
   - **Disabled —** Disables the TCP/UDP Checksum Offload (IPv6) function for both receiving and transmitting.

- **Rx Enabled —** Enables the TCP/UDP Checksum Offload (IPv6) function only for receiving IPv6 packets.
- **Tx Enabled —** Enables the TCP/UDP Checksum Offload (IPv6) function only for transmitting IPv6 packets.

4. Click **OK**.

VLAN ID

The VLAN ID property allows you to specify a VLAN ID on your network to the adapter port. The adapter port adds the value of the VLAN ID to a frame in the VLAN tag before transmitting the frame.

To change the VLAN ID value, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **VLAN ID** in the Property box.

   The VLAN ID page is displayed as shown in Figure 43.

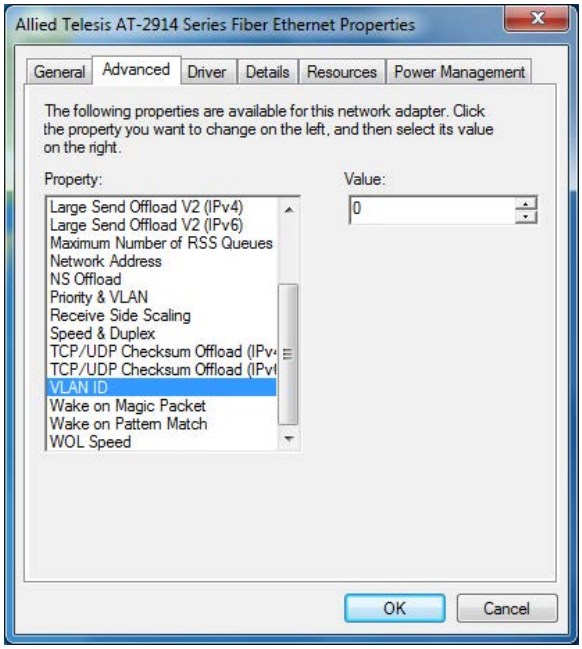


Figure 43. VLAN ID Page

3. Specify a VLAN ID in the Value box.

   The range of the value is from 0 to 4094. The default value is 0.

4. Click **OK**.

Wake on Magic Packet

The Wake on Magic Packet feature enables the adapter to wake up from a low-power mode when the adapter port receives a Magic packet.

To enable or disable the Wake on Magic Packet feature, do the following:

1. Access the Advanced Properties.

   See "Accessing Advanced Properties" on page 71.

2. Select **Wake on Magic Packet** in the Property box.

   The Wake on Magic Packet page is displayed as shown in Figure 44.

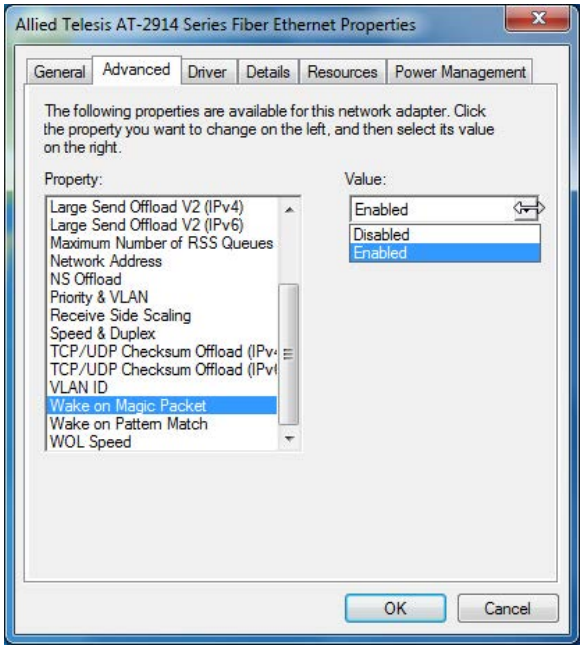


Figure 44. Wake on Magic Packet Page

3. Select one of the following options:

   - **Enable —** The adapter wakes up from a low-power mode when receiving a Magic Packet. This is the default setting.
   - **Disable —** The adapter stays in a low-power mode when receiving a Magic Packet.

4. Click **OK**.

Wake on Pattern Match

The Wake on Pattern Match feature enables the network adapter to wake up from a low-power mode when the packet matches the wake patterns specified in the operating system.

To enable of disable the Wake on Pattern Match feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 71.

2. Select **Wake on Pattern Match** in the Property box.

   The Wake on Pattern Match page is displayed as shown in Figure 45.

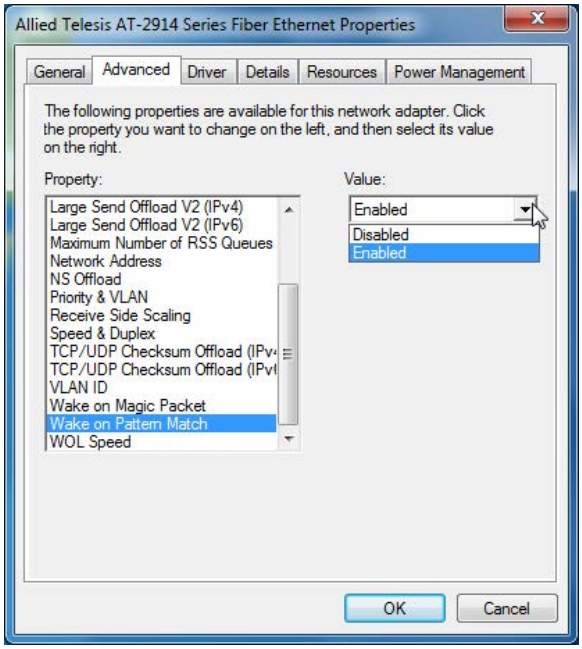


Figure 45. Wake on Pattern Match Page

3. Select one of the following options:

   - **Enable —** The adapter wakes up from a low-power mode when receiving a packet that matches one of the patterns specified in the operating system.
   - **Disable —** The adapter stays in a low-power mode.

4. Click **OK**.

WOL Speed

The WOL Speed property allows you to specify the speed of Wake-on-LAN on your adapter port. This speed does not affect the speed of the fiber connection to your network.

To view this setting, do the following:

1. Access the Advanced Properties.

   See "Accessing Advanced Properties" on page 71.

2. Select **WOL Speed** in the Property box.

   The WOL Speed page is displayed as shown in Figure 46.

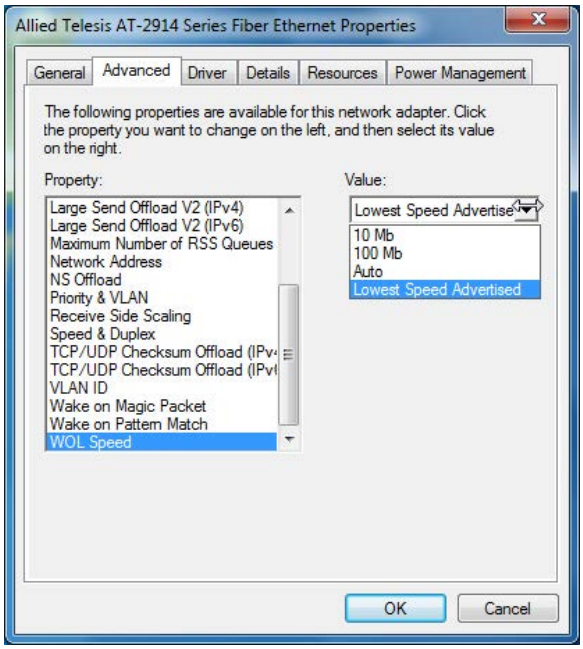


Figure 46. WOL Speed Page

3. Select one of the following options:

   - **10 Mb -** Not applicable.
   - **100 Mb -** Not applicable.
   - **Auto -** The speed of Wake-on-LAN is auto negotiated.
   - **Lowest Speed Advertised -** This is the default setting.

4. Click **OK**.

Chapter 7

Uninstalling the Driver Software

This chapter describes how to uninstall the driver software for the 2914 series network adapter.

This chapter contains the following topics:

Overview

When you no longer use the 2914 network adapter for your computer, you can uninstall the driver software from your operating system.

As you can install driver software for the 2914 network adapter using Device Manager or the silent installation method, you can also uninstall driver software in two ways:

- "Uninstalling the Driver Software Using Device Manager" on page 101
- "Uninstalling the Driver Software Silently" on page 102

Guidelines

Here are the guidelines for uninstalling the driver software from your system:

- You must have Administrator privileges to remove the driver software.
- Before uninstalling the network adapter, capture all of the Advanced Property settings for later use. The properties are lost during the uninstall process.

Uninstalling the Driver Software Using Device Manager

To uninstall the driver software from your operating system, do the following:

1. Start your Windows operating system and log in.
2. Access the Device Manager.

   See “Installing the Driver Software” on page 47.
3. In the Device Manager window, expand the Network Adapters folder.
4. Right-click the Allied Telesis **AT-2914 Series Fiber Ethernet**.

   The shortcut menu appears as shown in Figure 47.

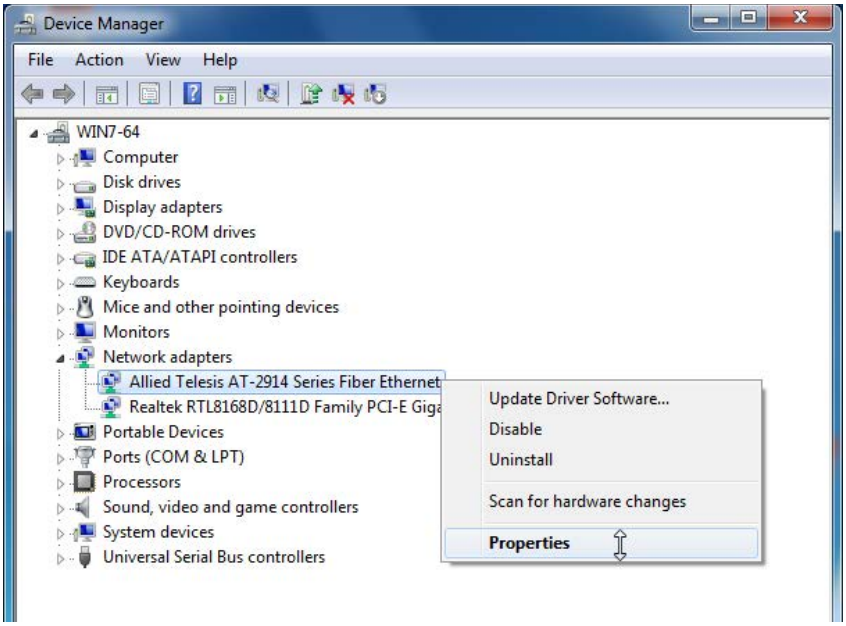


Figure 47. Device Manager Shortcut Menu

5. Select **Uninstall**.

   The Confirm Device Uninstall window pops up.
6. Check the check box if you want to remove the driver software for your adapter.
7. Click **OK** to complete the uninstalling.

Uninstalling the Driver Software Silently

You can apply the silent installation method to uninstall the driver.

To uninstall the driver without user-intervention, perform the following steps:

1. Open a command prompt window with administrator privileges.
2. Change the directory to the folder where the `dpinst` utility and the driver files reside.
3. Uninstall the driver silently by executing the following command:

   `> dpinst /U inf_file_name.inf /S`

   Note
   Replace *inf_file_name* with the name of `.inf` file.

   The driver is uninstalled without user-intervention.

Chapter 8

Troubleshooting

This chapter describes troubleshooting procedures. It contains the following sections:

Checking the Port LED on the Adapter

This section describes the states of the LEDs.

LED on 2914SX/SC and 2914SX/LC

The 2914 series network adapter except the 2914GP/SP model comes with one LED. The LED indicates the link and activity status for the port.

Note
Before the port LED can provide troubleshooting information, the driver software for your particular operating system must be installed and the adapter must be connected to the network. See Chapter 3, "Installing the Driver Software" on page 43.

Table 6 describes the link status that LED's indicate.

Table 6. LED Status

State	Description
On	Valid link.
Off	No link.
Flashing	The port is receiving or transmitting network packets

LEDs on 2914SGP/SP

The twisted pair port has two LEDs. For link states and descriptions, see Table 7.

Table 7. LED Status for the Twisted Pair Port on 2914GP/SP

LED	State	Description
Top-Left LED (For Twisted Pair Port)	On	Valid link on the twisted pair port
	Off	No link on the twisted pair port
	Flashing	The twisted pair port is receiving or transmitting network packets.
Top-right LED (For Fiber Port)	On	Valid link on the fiber optic port
	Off	No link on the fiber optic port
	Flashing	The fiber optic port is receiving or transmitting network packets.

Fiber Optic Ports

The following checklist provides recommended actions to take to resolve problems installing the 2914 adapter card or running it in your system.

> **Note**
> Before opening the cabinet of your system for removing or inserting the adapter card, review all precautions outlined under “Reviewing Safety Precautions” on page 31.

- ❒ Inspect all cables and connections. Verify that the cable connections between the adapter and the switch are attached properly.
- ❒ Verify that you match the wavelength of the network adapter port with the wavelength of the switch port. The 2914SX/SC or 2914SX/LC network adapter should be connected to a 1000BASE-SX switch port. For the 2914SP and 2914GP/SP network adapters, the wavelength of the SFP installed to the network adapter must be matched with the wavelength of the switch port.
- ❒ Verify that the TX port of the fiber connector is connected to the RX port of the link partner and RX port of the fiber connector is connected to the TX port of the link partner.
- ❒ If you are using Bi-Di optical transceiver, verify the wavelengths are reversed. The TX port of the fiber connector on the 2914 series network adapter has the same wavelength as the RX port of the link partner and the RX port on the 2914 series network adapter has the same wavelength as the TX port of the link partner.
- ❒ Check the adapter installation by reviewing Chapter 2, “Installing the Hardware” on page 29.
- ❒ Make sure that the adapter card is properly seated in a PCIe slot.
- ❒ Check for specific hardware problems, such as obvious damage to board components or the PCIe edge connector.
- ❒ Check the configuration settings and change them if they are in conflict with another device.
- ❒ Make sure that your system is using the latest BIOS.
- ❒ Try inserting the adapter card in another slot. If the new position works, the original slot in your system may be defective.
- ❒ Replace the failed adapter card with one that is known to work properly. If the second adapter card works in the slot where the first one failed, the original adapter card is probably defective.
- ❒ Install the adapter card in another functioning system and run the tests again. If the adapter card passed the tests in the new system, the original system may be defective.

- ❒ Remove all other adapter cards from the system and run the tests again. If the adapter card passes the tests, the other adapter cards may be causing contention.
- ❒ If the remote network device is a managed device, use its management firmware to determine whether its port is enabled.
- ❒ If the problem is with two BiDi (bi-directional) transceivers, refer to their data sheets to verify that their transmission and reception frequencies are opposite each other. For instance, a BiDi transceiver that transmits and receives at 1310nm and 1550nm, respectively, has to be connected to a transceiver that transmits and receives at 1550nm and 1310nm, respectively. Two BiDi transceivers will not establish a link if they transmit and receive at the same frequencies.
- ❒ Test the attenuation of both directions on the fiber optic cable with a fiber optic tester to determine whether the optical signal is too weak or strong.
- ❒ If there is no link, try creating a loopback between the TX port and the RX port of the fiber connector. A successful link may indicate an incompatibility or fault with the connected cables or equipment.
- ❒ For the 2914SP and 2914GP/SP network adapters, verify that you are using an SFP that is known to work properly.

Twisted Pair Ports

The following are troubleshooting suggestions for the PoE+ RJ-45 twisted pair port on the 2914GP/SP network adapter:

Problem 1: The network adapter is connected to the 2914GP-PSU power adapter but is not providing power to the powered device on the RJ-45 twisted pair port. Try the following:

- ❒ Verify that the network cable is securely connected to RJ-45 ports on the network adapter and powered device.
- ❒ Verify that the DC wire on the 2914GP-PSU power adapter is securely connected to the DC connector on the 2914GP/SP network adapter.
- ❒ Verify that the AC outlet has power by connecting another device to it.
- ❒ Verify that the computer and powered device are operating normally.
- ❒ Check that the power requirements of the powered device do not exceed 25.5 W. Refer to the device's documentation or data sheet.
- ❒ Try replacing the 2914GP-PSU power adapter.
- ❒ Try connecting another PoE device to the network adapter.
- ❒ Try replacing the twisted pair cable.

Problem 2: The network adapter is not providing power from the PCIe connector to a powered device on the RJ-45 twisted pair port. Try the following:

- ❒ Verify that the network cable is securely connected to RJ-45 ports on the adapter and powered device.
- ❒ Verify that the computer and powered device are operating normally.
- ❒ Verify that the power requirements of the powered device do not exceed the maximum power available from the network adapter. First, determine the power requirements of the powered device by referring to its user documentation. Then compare that to the output of the computer's PCIe 12V power rail. This is usually 10-15W. This value can be found in the computer's user documentation. As a safety margin, reduce the power rail value by 20%. The resulting value is the maximum power that the network adapter can supply from its RJ-45 port to a powered device. For example, if the computer's PCIe power rail has an output of 14W, the network adapter can provide a maximum of 11.2W to a powered device.

- ❒ Verify that the powered device supports Mode A of the IEEE 802.3at standard. Mode A is one of two modes that define the connector pins that deliver the power from the port in the network adapter to the powered device.
- ❒ Try connecting another PoE device to the RJ-45 port on the network adapter.
- ❒ Try replacing the twisted pair cable.

Problem 3: The twisted pair port on the network adapter is usable to establish a link to a non-PoE device. Try the following:

- ❒ Verify that the network cable is securely connected to RJ-45 ports on the adapter and powered device.
- ❒ Verify that the computer and powered device are operating normally.
- ❒ Try connecting another non-PoE network device to the network adapter.
- ❒ Try replacing the twisted pair cable.

Testing Network Connectivity

This section describes how to test network connectivity for Windows and Linux networks.

Guidelines

Here are guidelines to the adapter and switch settings:

- When you are using the fiber optic port or a Gigabit SFP, both the adapter and the switch must be set to Auto-Negotiation.
- When using a 100Mbps SFP, the adapter must be set to Auto-Negotiation. The switch may work at Auto-Negotiation, or may need to be set to 100Mbps with the full duplex mode, depending on the switch.
- You can test the connectivity of the 2914 network adapter either from the host device or another device in the same network. Choose a test method from the following options:
  - If the host device where you installed the 2914 network adapter has other network adapters, go to “Testing the 2914 Network Adapter from Another Device,” next.
  - If the 2914 network adapter is only one network adapter installed in the host device, you can use either method: “Testing the 2914 Network Adapter from Another Device,” next, or “Testing the 2914 Network Adapter from the Host Device” on page 110.

Testing the 2914 Network Adapter from Another Device

If the host device where you installed the 2914 network adapter has other network adapters, test the connectivity from another device in the network.

To test the connectivity of the network adapter from another device in the network, perform the following procedure.

1. Complete the adapter driver installation. See “Completing the Adapter Driver Installation” on page 39.
2. Assign an IP address to the 2914 network adapter.

   The IP address can be a static address that you manually assigned it or a dynamic address from a DHCP server.
3. If you do not know the IP address of the 2914 network adapter, start Command Prompt.

   There are several ways to start Command Prompt. One of therm is by clicking the Start icon in the bottom left corner of the host device’s screen. In the search box, type `cmd` and press Enter.

4. Issue the `ipconfig /all` command at the prompt and remember the IP address of the 2914 network adapter.
5. From another device in the same network, issue `ping` command with the IP address of the 2914 network adapter at Command Prompt.
6. Check the ping results.

Testing the 2914 Network Adapter from the Host Device

If the 2914 network adapter is only one network adapter installed in the host device, you can test the connectivity from the host device of the 2914 network adapter.

To test the connectivity of the network adapter, perform the following procedure.

1. Complete the adapter driver installation. See "Completing the Adapter Driver Installation" on page 39.
2. Assign an IP address to the 2914 network adapter.

   The IP address can be a static address that you manually assigned it or a dynamic address from a DHCP server.
3. Start Command Prompt.

   There are several ways to start Command Prompt. One of therm is by clicking the Start icon in the bottom left corner of the host device's screen. In the search box, type `cmd` and press Enter.
4. Issue the `ping` command with the IP address of another device in your network at the system.

   Example: `ping 192.168.1.30`
5. Check the ping results.

Linux

To verify that the Ethernet interface is up and running, run '`ifconfig`' to check the status of the Ethernet interface. In addition, you can use the '`netstat -i`' command to check the statistics on the Ethernet interface. Consult the manual pages for more information about the '`ifconfig`' and '`netstat`' commands.

To ping an IP host on the network to verify connection has been established, perform the following procedure.

1. From the command line, type **`ping`** **`<`*`IP address`*`>`**.
2. Press **Enter**.

   The command displays the packet send/receive status.

Appendix A

Specifications

Physical Specifications

Table 8. Product Dimensions and Weight

Model	Dimensions (Without a Bracket)	Weight (Without a Bracket)
2914SX/C 2914SX/LC 2914SP	87.6mm x 68.9mm (3.5in. x 2.7in.)	40g (1.4oz)
2914GP/SP	14.97 cm x 7.37 cm (5.9 in x 2.9 in)	94g (3.3oz)

Environmental Specifications

Operating Temperature:	0°C to 50°C (32°F to 122°F)
Storage Temperature:	-25°C to 80°C (-°13F to 176°F)
Relative Humidity:	5% to 90% (non-condensing)
Altitude:	3,048 m (10,000 ft.)

Power Specifications

Table 9. Power Specifications

	Voltage	Power Consumption
2914 Series	3.3V	2.0 watts
Requirement for 2914GP/SP when supplying power to PD device	12V	Up to 36 watts (Depending on PoE load)

Optical Specifications

Here are the operating specifications for the duplex SC port on the 2914SX/SC network adapter:

Output Optical Power:	-9.5 (Min)	-4 (Max) dBM
Optical Sensitivity:	-20 (Typ)	-17 (Max) dBM
Maximum Input Power	-3 dBm (min)	
Center Wavelength	850 nm	

Here are the operating specifications for the duplex LC port on the 2914SX/LC network adapter:

Output Optical Power:	-9.5 (Min)	-3 (Max) dBM
Optical Sensitivity:	-19 (Typ)	-17 (Max) dBM
Maximum Input Power	-17 dBm (min)	
Center Wavelength	850 nm	

RJ-45 Twisted Pair Port Pinouts

Figure 48 illustrates the pin layout of the RJ-45 connector on the 2914GP/SP network adapter:

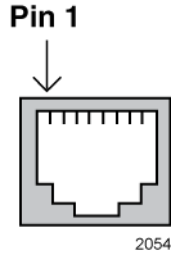


Figure 48. Pin Layout (Front View) of Twisted Pair Port

Table 10 lists the pin signals at 10/100Mbps.

Table 10. Pin Signals at 10/100Mbps on the RJ-45 Twisted Pair Port

Pin	MDI Signal	MDI-X Signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
4	Not used	Not used
5	Not used	Not used
6	RX-	TX-
7	Not used	Not used
8	Not used	Not used

Table 11 lists the pin signals at 1000Mbps.

Table 11. Pin Signals at 1000Mbps on the Twisted Pair Port

Pin	Pair	Signal
1	1 +	TX and RX+
2	1 -	TX and RX-
3	2 +	TX and RX+

Table 11. Pin Signals at 1000Mbps on the Twisted Pair Port (Continued)

4	3 +	TX and RX+
5	3 -	TX and RX-
6	2 -	TX and RX-
7	4 +	TX and RX+
8	4 -	TX and RX-